THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

EDITORIAL STAFF

WARREN L. BAKER
Editor

J. KENT RIDLEY
Managing Editor

ASSOCIATE EDITORS

L. J. LOGAN — WM. V. GROSS

DISTRICT EDITORS

B. F. LINZ.....Washington
J. V. HICHTOWER.....New York
FRANK TAYLOR.....Tulsa
H. H. KING.....Fort Worth
EARL S. POST.....San Antonio
A. W. BYRAM.....Austin
ELTON STERRETT, GILBERT M. WILSON, GORDON B. NICHOLSON, RIVERS REAVES.....Houston

PUBLISHED BY

THE GULF PUBLISHING COMPANY

HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*
TOM W. NELSON, *Advertising Manager*

Staff correspondents at all important points.

Member Audit Bureau of Circulation
Member Associated Business Papers, Inc.

BRANCH OFFICES

NEW YORK.....250 Park Ave.
PITTSBURGH.....Vandergrift Bldg.
CHICAGO.....332 S. Michigan Ave.
LOS ANGELES.....W. W. Wilson Bldg.
Huntington Park, Calif.
TULSA..... Hunt Bldg.
FORT WORTH.....W. T. Waggoner Bldg.
WASHINGTON.....Albee Bldg.

ADVERTISING STAFF

DICK SWINSKY.....New York
C. A. WARDLEY.....Pittsburgh
H. G. FITZPATRICK.....Chicago
J. F. CARTER, JR.....Tulsa
JAY CURTS, JR.....Los Angeles
CHAS. WYATT.....Houston

CIRCULATION DEPARTMENT

J. T. WAGONER.....Manager

SPECIALIZED OIL JOURNALS

Published by

THE GULF PUBLISHING COMPANY

The Oil Man's Calendar

OCT. 29–30	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
31	California Natural Gasoline Association, Los Angeles.
NOV. 2– 7	American Petroleum Institute, Annual Meeting, San Francisco.
13–14	American Association of Oil Well Drilling Contractors, Annual Meeting, Dallas, Texas.
DEC. 3	New Mexico Oil & Gas Association, Artesia.
5	Oklahoma Stripper Well Association, Tulsa.
FEB. 26–27	American Petroleum Institute Division of Production, Southwestern District, Dallas, Texas.
28	North Texas Oil & Gas Association, Wichita Falls, Texas.

Contents « October 27, 1941

Volume 103, Number 8

The Changing Panorama..... 7

Feature Section:

Thirty Thousand Wells..... 9
BY RAY L. DUDLEY

Washington Roundup..... 10
BY B. F. LINZ

Oil Demand Soars; Good Prices Needed to Spur Discoveries..... 13
BY L. J. LOGAN

Pacific Coast Line Constructed Speedily Despite Difficult Terrain..... 15
BY GILBERT M. WILSON

Effect of Sand Grain Size Distribution Upon Porosity and Permeability..... 26
BY WILBUR F. CLOUD

Alberta Basin Becomes Important Factor..... 26
BY FRANK R. HENRY

Practical Operating Hints for the Production Man..... 44

Practical Operating Hints for the Drilling Rig..... 48

News Section and Index..... 51

Looking Ahead with the Editor..... 2

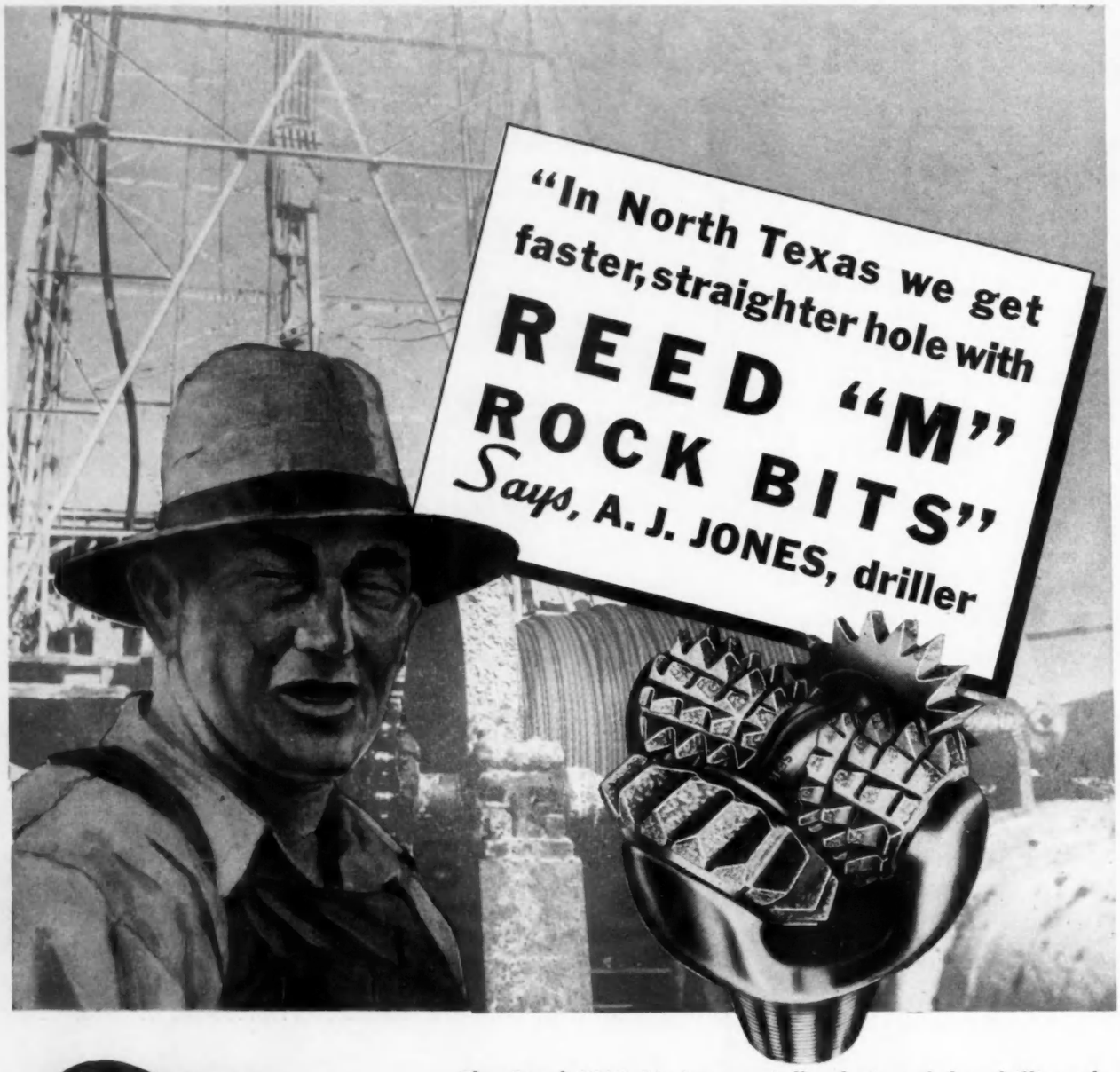
Notes for the Equipment Buyer and User..... 78

Squeaks from the Bull Wheel..... 77

Index to Advertisers..... 80

Published every Monday. Single Copies 15 cents (Special Issues 50c). Subscription price: domestic and foreign, $2.00 a year; 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application.

Copyrighted 1941 by The Gulf Publishing Company.



Made by EXPERIENCED EXPERTS for EXPERIENCED EXPERTS

The Reed "M" Bit is especially designed for drilling the medium hard formations, such as: UNCONSOLIDATED SANDS, SALT, GYPSUM, CHALK, ANHYDRITE, MEDIUM HARD SHALE and some of the lime rocks which are not extremely hard or abrasive.

This bit has excellent digging qualities in the "Shale and Shell" formations.

THERE IS A REED ROCK BIT ESPECIALLY DESIGNED FOR SPECIFIC FORMATIONS

REED ROLLER BIT COMPANY

REED ROTARY DRILLING TOOLS
SPEED • ECONOMY • DURABILITY

POST OFFICE BOX 2119 **HOUSTON, TEXAS**

The Changing Panorama

Sharp Gain in Oil Demand Lies Ahead

An Increase of Half to a Million Barrels Daily Not Unlikely

Although the United States currently is producing greater volumes of crude petroleum than ever before, it is to be called upon to produce even larger quantities in the near future—if the industry is to meet all demands that will be imposed upon it. Current production of 4 million barrels daily may have to be boosted to 4½ million or perhaps even to 5 million barrels within the next year.

Many students of the industry have recently expressed themselves as thinking such increases are probable. Robert E. Allen, director of production for OPC, 10 days ago told the Interstate Oil Compact Commission that plans were being studied to see how the industry could produce, refine and transport 5 million barrels per day. At the same time, Dr. A. G. White, petroleum economist for the United States Bureau of Mines, predicted an increase in demand that might range anywhere from 6 to 12 percent. John Suman, president of the A. I. M. E., on the same day was telling that group an increase of 7½ percent in 1942 likely would be needed. Frank Buttram, president of the Independent Petroleum Association, thinks 4½ million barrels should be planned for. Others have expressed themselves as having similar beliefs.

This large increase in output, which has already gained half a million barrels daily since January, means that the industry instead of being adequately prepared to fulfill all demands made upon it is going to have to do a lot of expanding. This applies to drilling, producing, refining and transportation. All this will require steel. Will the industry get sufficient quantities to fulfill demands?

In this connection, the remarks of OPC Production Director Allen at the Interstate Compact meeting are timely and encouraging. Allen stated:

"The people in charge of defense have now become impressed with the importance of oil. More steel has become available as a result. Exploration is at the top of the list [priority] . . . We must continue to drill 30,000 wells every year . . . Oil field equipment may now be included within the defense-supplies rating plan."

Last week Petroleum Coordinator Ickes said an attempt will be made to secure priorities for material to add new units to existing refineries. The week also saw the granting of high priority ratings on seven new aviation-gasoline plants.

These apparent changes in attitude with respect to oil's steel requirements may mean the industry is going to get more metal than previously thought probable. Should this prove true, 1942 may become a "good" petroleum industry year instead of a "bad" one. The demand is practically certain, and an intensive expansion program is all that is needed to put 1942 over the top.

Soviet Oil Endangered . . .

The recent rapid advance of the German army in Russia is creating a double threat to the Soviet supply of oil.

By pushing as far east as Rostov, the Germans are around the big bend in the Sea of Azov, thereby opening the way for an invasion of the rich Russian oil fields of the Caucasus area. At Rostov, Hitler's men are within 200 miles of the Kuban-Maikop oil region, 400 miles from Grozny and about 700 miles from Baku. Thus they have covered nearly half the distances to these fields since the war started.

In addition to the threat of a direct invasion of the Soviet's principal oil producing area, normal petroleum transportation from these fields already is being disrupted. Therefore, even if an invasion is not made, the Russians are going to find it difficult to ship petroleum from their own fields that produce 90 percent of the Soviet oil output. The major railroad from the Caucasus to Russia proper runs through Rostov. The use of pipe-line facilities from the Caucasus is out of the question already, because the Germans control the north shore of the Black Sea and pipe lines in the region carry oil from the fields near the Caspian sea to the Black sea.

Threatened Ruling Imperils Write-Offs

Bureau of Internal Revenue Studies Use of Deductions

With a view to filling in gaps in national income not plugged by the recently enacted taxation legislation, it appears that the Bureau of Internal Revenue has been examining closely into allowable deductions to natural resource industries which under present practice have included write-offs of intangibles in drilling costs. Under this practice it has been widely found economically sound to contract drilling, even though the producing company had its own rigs stacked.

If the forecasted change in ruling by the bureau is made effective, this write-off of intangibles, such as expenditures for wages, fuel, repairs, hauling, supplies, incident to and necessary for the drilling of wells and the preparation of wells for production will be eliminated on contract work. Examples of labor on which this option of intangible write-off or capital account will be eliminated are amounts paid for drilling, shooting or cleaning of wells; clearing of ground, draining, road-making and surveying and geological work; and construction of derricks, tanks, pipe lines and other physical structures necessary for drilling and production. A former ruling specifically stated that drilling and development costs should not be excluded because they were incurred under a footage contract. The reported pending action of the bureau is to withdraw the option and to require that a well be completed and delivered on a turn-key basis, under which the operation becomes a single capital item. The net effect of the change appears to be the introduction of a wide cost spread between company and contracted drilling, with the producer deprived of a certain and considerable amount of tax relief if the development is contracted.

Relief from the overburden of such a ruling appears to lie in claiming such write-offs as heretofore, appeals and finally a decision

on its merits of each case so taken to court. Under such a procedure the ultimate effect of the ruling is postponed, if not even thrown out somewhere in the course of the extended litigation. Where a company is not prepared to enter on such a legal struggle, it appears that in areas where the spread is wide, a return to company drilling is inevitable or a marked increase in the cost of contract drilling must be made to cover the increased tax cost. Drilling and the drilling contracting industry are at this time in no position to be burdened with additional revenue measures if oil reserves are to be maintained.

SHAKE-OUTS
From The News

First shipment of toluol left the plant of Baytown Ordnance Works, Baytown, Texas, October 23, exactly one year from the date when Humble Oil & Refining Company signed a contract with the War Department for building and operating the plant. The unit cost $12,000,000, which was provided by the War Department.

Movement of the two tank cars of finished toluol was witnessed by representatives of the United States Army, contracting firms, Humble Oil & Refining Company and the press. The visitors were guests of the company for an inspection of the plant and lunch at the dining room outside the plant yard.

»

The biggest barge haul of gasoline, 3,000,000 gallons, is enroute up the Mississippi River from New Orleans to Pittsburgh. One river towboat is handling the consignment aboard six barges. About 21 days will be required for the trip.

»

A new $1,500,000 marine terminal of The Atlantic Refining Company at Fort Mifflin, near Philadelphia, went into service October 16 when the Atlantic tanker Robert C. Tuttle tied up to discharge 155,000 barrels of crude oil loaded at Port Arthur, Texas. The terminal embraces a big cargo discharge stock, four storage tanks, pumping equipment, and two 16-inch pipe lines leading to the Point Breeze refinery five miles distant.

»

One of the world's largest tankers was launched October 21, Sinclair's $2,500,000 Patrick J. Hurley sliding down the ways at Kearny, N. J. The 5,460,000-gallon vessel was launched 36 days ahead of schedule, despite a 19-day labor strike. It is capable of delivering 12,500,000 gallons of Gulf Coast petroleum to the Eastern Seaboard every month, making about 7 round trips every 3 months.

»

Petroleum synthetic rubber production will be boosted by construction of another 10,000-long-ton-capacity plant near Louisville by The Hycar Chemical Company, owned jointly by The B. F. Goodrich Company and Phillips Petroleum Company. Hycar will have a capacity for making 17,000 tons when it is completed, or four times the synthetic production of the United States in 1940.

A process for converting whale and shark oil into aviation lubricating oil is reported to have been perfected by Japanese chemists. The Tokyo Times and Advertiser, announcing the process, said the oil insures the nation against a shortage. It was described as having a high degree of viscosity.

»

Standard Oil Company of California has under consideration a plant at its Richmond refinery on San Francisco Bay, for the production of high grade aviation lubricants. To cost approximately $5,000,000, building of the new unit will depend upon the company being able to obtain priorities for materials.

»

Richfield Oil Corporation's new tanker, S. S. Charles S. Jones, was launched October 11 at Sparrows Point. Keel of the vessel was laid May 21 this year. The tanker has a dead weight of about 12,900 tons and a tank capacity of 101,400 bar- or 4,258,800 gallons. The cargo tank space is divided into 24 compartments, allowing many grades of oil to be carried at one time. Pumping capacity is designed to load or unload the vessel in less than 12 hours.

»

Magnetic surveys in each county in Arkansas will begin December 1 and continue for 12 months. The work, sponsored by the State Geological Department, will include computation of magnetic declination of various cities and towns. The observers will prepare maps and tables for easy determination of records.

»

Kenneth A. Kent, Vancouver, British Columbia, engineer claims he can now turn waste wood into commercial gasoline of good quality. His product, he states, will cost about three cents per gallon to manufacture. Kent liquefies producer-gas made from waste wood. No motor changes or extra gadgets would be required, he claims. So far it has not been actually tried out, but plans for construction of a model plant are underway.

»

The United States Government October 21 placed an order for 1200 additional tanks, 75 percent of which will be gasoline powered and the others diesel engined. The same week saw this country's first 60-ton tank come off the assembly line.

Trailer Tanker . . .

Stevens Institute of Technology, Hoboken, New Jersey, has completed tests of a specially designed trailer tanker model submitted by one of the large oil companies of the Atlantic Coast and has sent a report to the company. It is declared that the tests, conducted in the institute's experimental towing tank, established the practicability of towing such a tanker behind a tanker of conventional type in order to increase the transportation of oil up the Atlantic Coast. The company for which the work was done had in view the construction of trailer tankers of 50,000 barrels capacity and built of concrete.

The model used at Stevens Institute was about six feet long. Its cross-section had the shape of a flattened circle. When loaded, such a ship would be largely submerged and would have only a small superstructure. In testing the model, determinations were made of the horsepower required for towing at different speeds. From these determinations it was possible to ascertain the per-barrel cost of transporting oil in a conventional tanker with the trailer attached.

Stevens Institute has also been testing a trailer model of somewhat different type submitted by Erle P. Halliburton of Oklahoma. The Halliburton model has a circular cross-section and is provided with spherical ends. A third model undergoing tests has more or less conventional lines with vertical sides. It was submitted by an individual in Washington.

Louisiana Rumors . . .

Current reports that some Louisiana field allowables have been increased out of proportion with other fields have been found to be untrue generally, which is more than could have been said when the old Louisiana political machine was well oiled and functioning smoothly.

The state's allowable, as set by the Department of Minerals, was 319,500 barrels daily in June. Production for October was set at 339,233 barrels, the slight increase made to take care of crude demand and new wells and discoveries.

A check reveals there has been no wholesale reduction of individual field and well allowables to be added to the production quotas of others. Louisiana has experienced one hay ride, and apparently is not willing to go through another — at least not for the present.

EDITORIAL COMMENT

Thirty Thousand Wells

By RAY L. DUDLEY, Publisher

THE Petroleum Coordinator's Director of Production has stated, officially, to the Interstate Oil Compact that 30,000 wells must be drilled annually in the United States to develop and maintain the production necessary to civilian life and our National Defense Program (as a matter of fact, the Office of Petroleum Coordinator is understood to be actually thinking in terms of 32,000 wells annually). In view of the extraordinary demands for oil in prospect, this figure does not seem unreasonable to us.

If we are to take seriously the dangers, frequently mentioned by the coordinator, to tanker shipping from the Gulf Coast to the Atlantic seaboard, then we must realize that danger to shipping from West Indian points will be even greater. Which leads us to the conclusion that should heavy attacks be leveled by U-boats on tanker shipping near the source, movement of South American oil would be affected adversely even more than movement of domestic oil to the Atlantic seaboard. This is another way of saying that domestic production might have put on it a burden even greater than anybody in Washington now anticipates. If this should happen, even 30,000 new wells a year in the United States might not provide necessary crude.

Oil men realize that there is one limit to what present wells can do without adversely affecting ultimate recovery. They realize, also, that should the emergency arise, ultimate recovery could be forgotten in the face of desperate needs, in which event, present producing wells could reach still another higher limit of production.

But from the standpoint of the domestic industry doing the part now cut out for it, which does not take into consideration the possible loss to us and the British of South American oil, or a considerable portion of it, 30,000 wells may be considered a "must" program.

Now it is one thing to say that the industry *must* drill 30,000 wells, and it is another thing to drill them.

To drill these 30,000 wells will call for a great deal of equipment, a great deal of pipe. True, a material part of the 30,000 wells will be wildcat wells, requiring a minimum of pipe. True, salvaged materials can be brought into greater play than ever before, but it must be remembered that 1940 was not a heavy equipment buying year, that for years it has been the practice of oil companies to maintain stocks of supplies at a low point, and that the lean years of the depression have pretty well cleaned out the junk yards.

All of this means that priorities MUST be given to oil-country equipment, or the program necessary to sustain the very life of the coordinator's office will fail. There are ugly rumors floating around that politics are being played in this matter of priorities. The rumors do not do credit to the coordinator himself. If they are true, and we hope they are not, they mean that the coordinator would put control of the oil industry ahead of getting oil for the nation.

But whether true or not, the coordinator cannot shirk the responsibility of seeing that sufficient material is available to carry out his program of 30,000 wells annually.

Progress is being made in this direction. Let us hope that it is speeded up and also that consideration is given the peculiar nature of oil equipment needs and use. Due to the hazards encountered in drilling, it is frequently difficult to anticipate all requirements. An oil operator cannot wait 90 days for a piece of equipment when an emergency arises, he must have it at once. The only possible way of fulfilling requirements of this nature is to permit supply companies to carry adequate stocks.

Step Up Production Now

ON EVERY hand we hear that the demand upon the oil industry for more crude oil and refined products will reach new levels next year. There is talk of a demand for 5,000,000 barrels a day production, and new peaks of refined products to come from this crude.

This talk finds the crude and refined stocks of the country in such shape as ought to be improved immediately. Production should be stepped up and the oil stored. Refinery runs should be increased as far as possible and the products stored. If these things are not done the industry may wish that they had been.

Theoretically, it is the duty of the coordinator to recommend these things in a specific manner to the oil industry immediately, but if he does not, the industry should do them of its own accord. Regulatory bodies should make this possible by increased allowables.

Washington Roundup

Imminent return of 40 tankers by British announced as East Coast stocks begin climbing . . . Station curfew ended and coordinator proposes restrictions on deliveries be lifted . . . Texas - Georgia line supported

By B. F. LINZ, Washington Correspondent

THE imminent return of 40 of the tankers diverted to the British shuttle service and the immediate lifting of all restrictions on the consumption of gasoline in the Atlantic Coast area was the outstanding event of an otherwise quiet week on the Washington oil front.

Sprung without warning on a public which had nothing more than a faint hope that reportedly increasing inventories on the East Coast would result in a gradual lightening of the restrictions, Coordinator Harold L. Ickes' announcement that the 15 ships previously disclosed as being returned would be followed by 25 more brought immediate expectations that plans for the Texas-New York crude pipe line, concrete barges and other palliatives would immediately be halted.

Senator Francis Maloney (D., Conn.), chairman of a special Senate committee which recently investigated the East Coast situation and came to the conclusion that the shortage had been exaggerated and over-emphasized, had only one comment on Ickes' announcement that the restrictions would be lifted.

"I am very pleased," the Senator said, adding that he would call his committee together next week to decide whether further prosecution of the investigation would be necessary.

The only other important developments of the week were a meeting on aviation gasoline at which the possibilities of quick expansion of production were canvassed, and a conference of coordinator's officials in New York with representatives of the natural gas and natural gasoline industries, at which a program to bring them into the general coordination was considered.

Restrictions Off

With the return of 40 of the diverted tankers promised by the British within a month, Coordinator Ickes on October 23 withdrew immediatey his recommendation for the filling station "curfew" and recommended to the OPM the immediate lifting of the restrictions on deliveries of gasoline.

Ickes announced that he had reached an agreement with representatives of the British government under which 25 additional tankers are to be returned to their regular American service by November 30. Fifteen tankers were previously announced to be coming back, some of which, it is understood, already have been turned over.

All of the tankers to be restored to normal service will be assigned to the East Coast, and there was no indication that Ickes would permit any of them to be taken by the Army or Navy for the hauling of molasses, as had been suggested.

While the ships taken from the British shuttle service will immediately be put on the Gulf-Atlantic run, their release is "provisional," the coordinator said, and if the British petroleum situation changes materially so as to require renewed tanker aid—as a result of tanker losses in the Atlantic—the returned ships may have to be re-assigned to the shuttle service.

Return of the vessels was made possible because of major improvement in the British oil situation brought about by the "rapid application of the American tanker and petroleum program," Ickes said. The negotiations were carried on by Ickes with R. I. Metcalf, chairman of the tanker advisory committee of the Ministry of War Transport of the British government, who came to Washington from London for the purpose, and Sir Arthur Salter, head of the British Merchant Shipping Mission in the United States.

In announcing the consummation of the negotiations, the coordinator released a statement by Sir Arthur Salter, in which he said:

"In the spring, the British government appealed to the United States government to give tanker assistance in order to rebuild the oil stocks in the United Kingdom to a satisfactory level. In response to this appeal a large number of tankers were quickly supplied. It was, of course, clearly understood by both sides that when this vital, but temporary, object of rebuilding had been achieved, the tankers allotted for the purpose would be returned.

"It had been expected that this would be possible towards the end of this year. A reduction in the losses during the late summer, and certain other favorable factors, however, accelerated the rebuilding of the stocks. As the oil coordinator announced on October 7, the British government informed him that they felt able to begin a return of the vessels at once. Fifteen have already been so nominated for release this month. In continuation of the same policy, a further 25 vessels are being selected for release, subject to any new developments in the war situation, in the course of November.

"The hazards of war are, of course, uncertain, and while the present improvement now makes the return of tankers possible, the British government is confident that if the need again arises it will be met by similarly prompt and generous assistance.

"The British government desires to take this opportunity of expressing its deep appreciation to the United States government, the oil industry and the American public, whose interests and amenities have been affected, for the assistance

which has in a few months raised the oil supplies of Great Britain to their present level."

The coordinator announced that the returned vessels will be assigned to the East Coast run as quickly as they are released, their assignment and use to be worked out by the Tanker Control Board.

Acting promptly on the coordinator's recommendation, Priorities Director Donald M. Nelson announced on October 24 the revocation of the 25-day-old priorities order restricting the distribution of gasoline in the Atlantic Coast area.

The announcement of the prospective return of the tankers and the imminent lifting of all restrictions came less than 24 hours after representatives of the District No. 1 marketing committee and officials of the coordinator's office concluded an all-day canvass of the East Coast supply situation with a view to making recommendations as to the extent of restrictions which should be imposed by the OPM for November.

Eastern Stocks Up

The meeting broke up without reaching any decision, after it was developed that the East Coast stock situation had been materially improved, the American Petroleum Institute reporting that during the week ended October 18 stocks of gasoline had increased by 1,172,000 barrels, light-fuel oil by 794,000 barrels and heavy-fuel oil by 649,000 barrels, bringing inventories of the first two above the corresponding date a year ago.

The situation with respect to light oils was materially aided by the mild weather prevailing this month, which reduced consumption considerably below estimates. Heavy-oil supplies, however, it was said, are inadequate, but apparently not dangerously so in view of the imminent return of additional tankers.

It was said that the meeting also had some discussion of nation-wide control of gasoline and fuel oil as a means of spreading the effects of any restrictions that might be necessary, but that apparently has now gone by the board in view of the altered situation.

The improvement in East Coast stocks was in part due to the increased use of tank cars, 4396 of which moved into the area during the week ended October 18 as compared with 4332 cars in the preceding week.

"The restoration of the 40 tankers has enabled us to reach the goal toward which the Office of the Petroleum Coordinator has been striving since this summer—the removal of gasoline restrictions which were necessarily invoked on the East Coast," Ickes said, in announcing the expected return of the tankers.

"The many steps taken by the office of the coordinator, together with the outstanding cooperation and help given by the oil industry on all fronts, brought a rapid improvement in the general East Coast oil situation. On top of this improvement, the effective aid given the British has enabled the release of tankers. The restoration of these vessels will mean that we will be able to maintain a better supply of petroleum on the East Coast as long as the ships can be kept in normal service."

Return of the vessels was seen in some quarters as effectually halting all chance of construction of the proposed Texas-New York crude line, but there is some possibility that a Texas-Georgia line may eventually be constructed, but on an economic rather than emergency basis.

It was also considered at first glance that the new situation would stop further consideration of the construction of concrete barges, and that full dependence now would be placed on the tanker-building program of the Maritime Commission, under which a large new fleet of oil carriers will come into service next year and in 1943.

Permit Interior Movement

Restrictions against the movement out of the Atlantic Coast area of oil or its products have been eased by Donald Nelson, director of priorities of the Office of Production Management, to permit the movement into Ohio and Kentucky of approximately 8,000,000 gallons of gasoline annually from refineries in West Virginia, Pennsylvania and New York lying west of the seventy-eighth meridian.

The OPM action was taken on the recommendation of the coordinator's office, following complaints from Ohio and Kentucky distributors that the original restriction order was creating a serious shortage and contentions from refiners of Pennsylvania grade that the marketing area for their gasoline, largely a by-product from their production of lubricating oil, had been cut virtually in half.

The order was based on a showing by Ickes that the restriction against the movement of this gasoline outside the area was merely causing hardships on both refiners and distributors without any compensatory contribution to the East Coast supply problem.

Aviation Gasoline

Estimating that storage stocks of 100-octane aviation gasoline will be falling 39,000 barrels behind daily needs by the beginning of the year, Wright W. Gary, director of the refining division of the coordinator's office, told representatives of the oil companies this week that an immediate boost in daily output from 40,000 to 60,000 barrels is necessary with further expansion provided as quickly as possible.

The industry was told that SPAB favors issuance of the highest obtainable priorities on equipment required to make the gasoline, and the joint munitions board has approved preference ratings of A-1-A for immediate construction of new plants to double the present capacity, and would consider a request for the remainder of the program—contemplating the output of 120,000 barrels a day by 1943—as soon as the 40,000-barrel increase has been achieved.

At the conference it was disclosed that consideration is being given to the desirability of having some single government agency purchase the industry's entire output of 100-octane gasoline on a three-year contract basis until facilities can be increased. This would benefit both the government and the industry by assuring supplies for the Army and Navy and guaranteeing refiners a long-term market for their product.

"Aggressive, immediate action" by the industry to increase its aviation-gasoline production was called for by Coordinator Ickes, October 24.

Under the best conditions, Ickes disclosed, it will be only with "extreme effort" that output will be increased to 100,000 barrels a day by the beginning of 1943.

"This is 20,000 barrels short of the goal set by the coordinator and indications are that even this objective may not prove sufficient to meet the heavy, growing demand for 100-octane fuel on the part of American flying forces and those of the nations being supplied from the United States," he said.

The coordinator made available the results of studies conducted in

each of the districts, showing present refinery capacity for high-test aviation gasoline as 43,278 barrels a day. Plants now nearing completion will add 2557 barrels a day by the beginning of the year, while others for which financing and other arrangements have been made will provide another 11,994 barrels and make the total over-all production 57,829 barrels daily by January 1, 1943, little more than half of the 100,000-barrel output at which Ickes now aims.

The possibility of developing the desired capacity within the next 13 months, he said, depends on the willingness and ability of refiners to provide the additional facilities shown by the surveys to be possible of construction. Most of the plants can be built, the study showed, if the companies can arrange for the necessary raw materials and are willing to undertake the job.

Subcommittee reports on these plants, it was said, show a potential possible additional capacity by 1943 of 41,688 barrels, which would bring the total to 99,517 barrels, with the further possibility of an additional 3000 barrels through improvement of base stocks used in the manufacture of aviation gasoline.

"The situation with respect to 100-octane aviation gasoline is far from comforting," Ickes admitted. "The results of the survey indicate a definite, positive need for the quick working out of cooperative arrangements by the government and the refining industry which will assure the building of whatever new plant facilities are required, including those for the production of base stocks and of the necessary blending agents.

"The government, for its part, stands ready with definite plans to assist in the financing of new refining equipment and to provide other incentives by way of encouraging full industry participation in this vitally necessary undertaking. I have every confidence that eventually we will achieve our objective, even though the immediate prospects are not too encouraging."

Natural Gas

Representatives of the coordinator's office met with members of the natural gas and natural gasoline industry in New York October 23 to plan for the gearing of that industry to national defense needs.

Paul M. Raigorodsky, new chief of the natural gas and natural gasoline section of the production division of the coordinator's office, and Robert E. Allen, director of production, represented Ickes at the meeting, to which all producers and processors of natural gas and gasoline, including cycling operations, were invited, together with the allied industries, including carbon black manufacture, liquefied petroleum gases, distillate and other derivatives.

Taxes

Revenues from all three of the federal oil taxes dropped between August and September, but in the latter month remained well ahead of September, 1940, it was reported by the Internal Revenue Bureau October 22.

Collections from the gasoline tax for September were $33,854,755 against $38,257,259 in August and $27,049,078 in September, 1940, while the lubricating oils tax returned $3,576,516 against $4,604,855 in the preceding month and $2,523,120 in the same month last year, and pipe-line transportation returned $1,084,839 against $1,175,113 in August and $904,727 last September.

For the first nine months of the year, the government received $274,959,439 from the gasoline tax against $185,861,304 in the corresponding period in 1940; $31,219,316 from lubricating oils against $24,997,451, and $9,850,558 from pipeline transportation against $8,946,204, bureau figures disclosed.

Pipe Line

Plans of Trans-American Pipe Line Corporation to build a crude-oil line from Wichita Falls, Texas, to Savannah, Georgia, were given the support of a number of Southern Senators and Congressmen last week, who urged Coordinator Ickes to give the company a hearing.

In a statement, Aldace Walker, vice president of Trans-American, charged that the major oil companies are opposing the line, hoping to clear the way for the proposed Texas-New York pipe line which, he asserted, will be used for natural gas after the emergency.

Whether Trans-American will receive much sympathy from the coordinator is doubtful, in view of his recent criticisms of the company, formed, he said, by "promoters" who "spend most of their time on the Hill" and "without the financial ability to undertake the construction."

Mexican Settlement

Reports that the Mexican government was preparing to retreat from its position with respect to settlement for the 1938 expropriation of oil properties, rejected earlier this month by Standard Oil Company of New Jersey, brought prompt denials from Mexican representatives in Washington this week.

In a statement under the seal of the embassy, Mexican Ambassador Francisco Castillo Najera said "It is with surprise that I read a message sent by a correspondent in Mexico City and published in a New York paper, indicating that there is a change in plans for the settlement of the so-called Mexican oil dispute.

"I am duly authorized by my government to emphatically deny that any such change has taken place," he declared. "The Mexican government has no other plan than the one considered by the State Department and the Mexican embassy in Washington."

Thompson Urges Ickes to Assign Tankers to Texas

Ernest O. Thompson, Texas Railroad Commission chairman, last week urged Federal Oil Coordinator Harold Ickes to assign to Texas the 15 tankers which press accounts said had been returned by the British.

"The press today," said Thompson, "carries an item from New York stating that 15 oil tankers were being released by the British to this country. May I respectfully express the hope that you will assign a sufficient number of these tankers to the job of moving gasoline or crude from Texas Gulf ports to the Atlantic Seaboard so that Texas refiners and producers may have adequate transportation to move gasoline or crude oil as needed.

"It would seem that by hauling gasoline instead of crude oil, the effectiveness of the tankers would be greatly augmented. Many Texas oil fields are now closed 9 days a month because of lack of transportation. They can promptly be opened for production on these 9 days if transportation is made available. The daily allowable production of these fields now shut-in 9 days a month is 1,600,000 barrels.

"By simply allowing Texas oil fields to produce on the days we are now closed down, there would be made immediately available more than 14,000,000 barrels of additional crude each month if needed, or if all is not needed, then we can open the wells for as many days as are needed to fill any demand. May I hear from you by wire how many of these tankers will be assigned to the Texas trade."

Thompson sent copies of the wire to Texas Senators Connally and O'Daniel, and Congressmen Rayburn and Lyndon Johnson urging that they see Ickes and support his request.

Oil Demand Soars; Good Prices Needed to Spur Discoveries

By L. J. LOGAN, Associate Editor

MUCH more significant than normally is the current situation with regard to demand for petroleum products, as unprecedented consumption and the prospect of a further sharp increase in demand have placed the industry in the extraordinary position of being concerned over its ability to supply the great quantities of oil required; although this attitude results not so much from the demand outlook itself as from the fact that the record-breaking demand is accompanied by shortages of materials needed in the oil fields and at the refineries and by government control of prices which already has forestalled crude price increases that would have given incentive for wildcatting and for more complete development of stripper-well reserves.

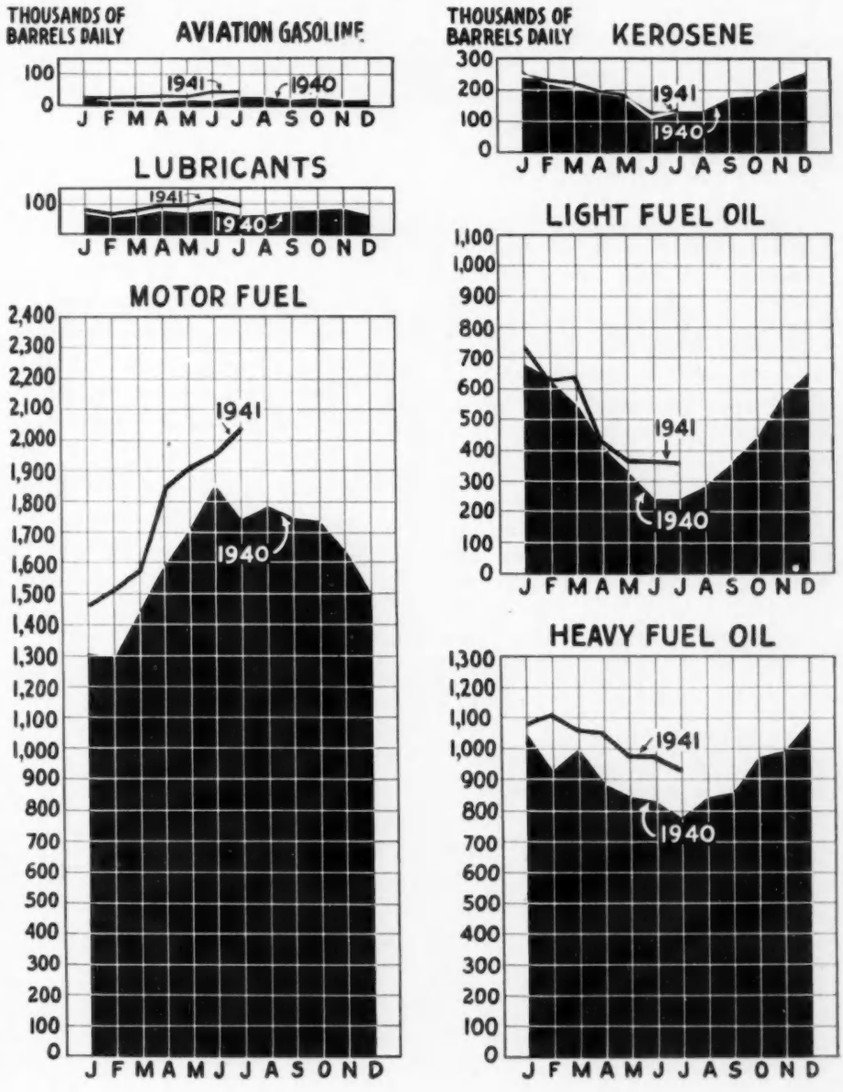
As long as there has been real incentive price-wise for producing oil, there has been adequate exploration and development of nearly-depleted fields to maintain consistently all the production needed by this country for its own use and for export; and when shortages have been seriously threatened, as in the early 1920's, prices of crude have increased substantially, in response to competition for supplies, and attractive prices have brought forth important oil field discoveries, even though new methods of finding oil, such as the various geophysical methods, have had to be developed to achieve such discoveries.

Such a situation again is at hand, according to far-sighted men of the industry, in which higher crude prices are needed to bring forth new discoveries and more stripper-well production in order to assure adequate supplies of crude oil to fulfill prospective market requirements.

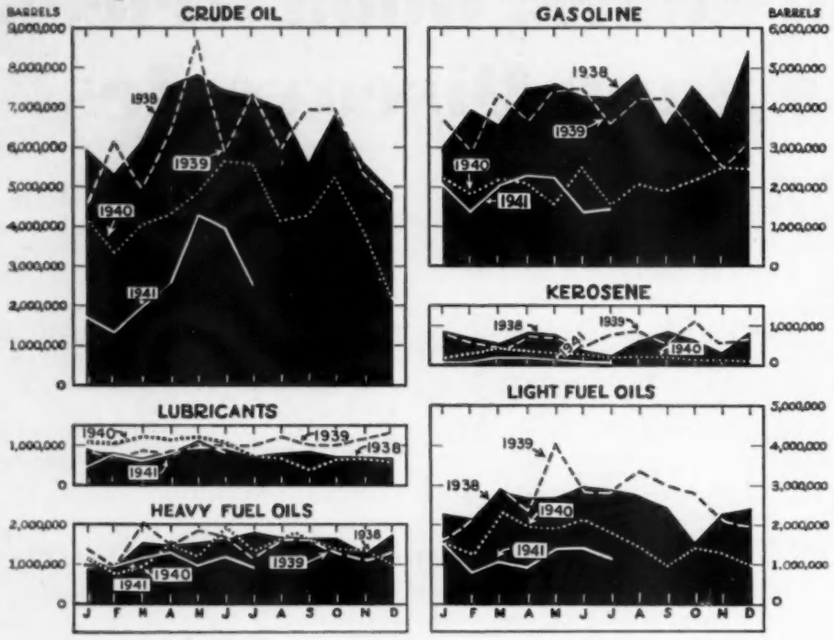
In evidence of its sincerity in taking this view, a major purchaser of Mid-Continent crudes has proposed to advance its postings 25 cents a barrel immediately; and in the hope of gaining approval of the raise by government price-control authorities, it has submitted comprehensive data to support its proposition. Similarly, producers of Pennsylvania grade crude have submitted data in justification of the 23-cent increase in the price of that oil which was blocked by the government. And to retain the postings now in effect, California producers likewise were obliged to

New Highs Reached This Year in Domestic Demand for Oils

Based on Bureau of Mines data, charts show daily average domestic demand for principal petroleum products, by months, in 1940 and 1941.



Exports of U. S. Oils Continue Greatly Subnormal



prove that they were justified by increased costs.

While the industry thus negotiates with government authorities for price increases that have been blocked only through the artificial force of mandates, consumption of petroleum continues to expand, and reserves both above ground and under ground diminish, as companies take oil out of their tanks besides withdrawing from their wells more than they currently are discovering in compensation.

Between January 1 and July 31 of this year, there was a net reduction of 16,784,000 barrels in the stocks of all oils in the United States, Bureau of Mines figures reveal; and August, September, and October have brought further withdrawals from above ground storage.

Use of storage oil, in the absence of adequate current production to fulfill market demand, has occurred particularly in the upper Mid-Continent and the Middle West, as the fields of Oklahoma and Illinois have been unable to produce all the oil that could be sold. Between January 1 and July 31, stocks of Oklahoma-origin crude were reduced 7,500,000 barrels, and those of Illinois-grade were lowered 2,000,000 barrels. Stocks of crude that originated in Texas, Louisiana, Arkansas, New Mexico, and California remained about unchanged, meanwhile, as those states continued able to meet market requirements from current production; although Texas now appears to be about the only state which could materially step up production, without damage to reservoirs, except through intensified drilling which would provide new fields and thereby increase producing ability.

An over-all picture of the situation with regard to under-ground reserves was presented in the report submitted by Phillips Petroleum Company to the oil coordinator and the price control agency in its petition for the authority to raise Mid-Continent crude prices 25 cents a barrel. In the report, the company showed that discoveries of new oil have been lagging; that in the face of steadily increasing demand, annual finding of new reserves has progressively

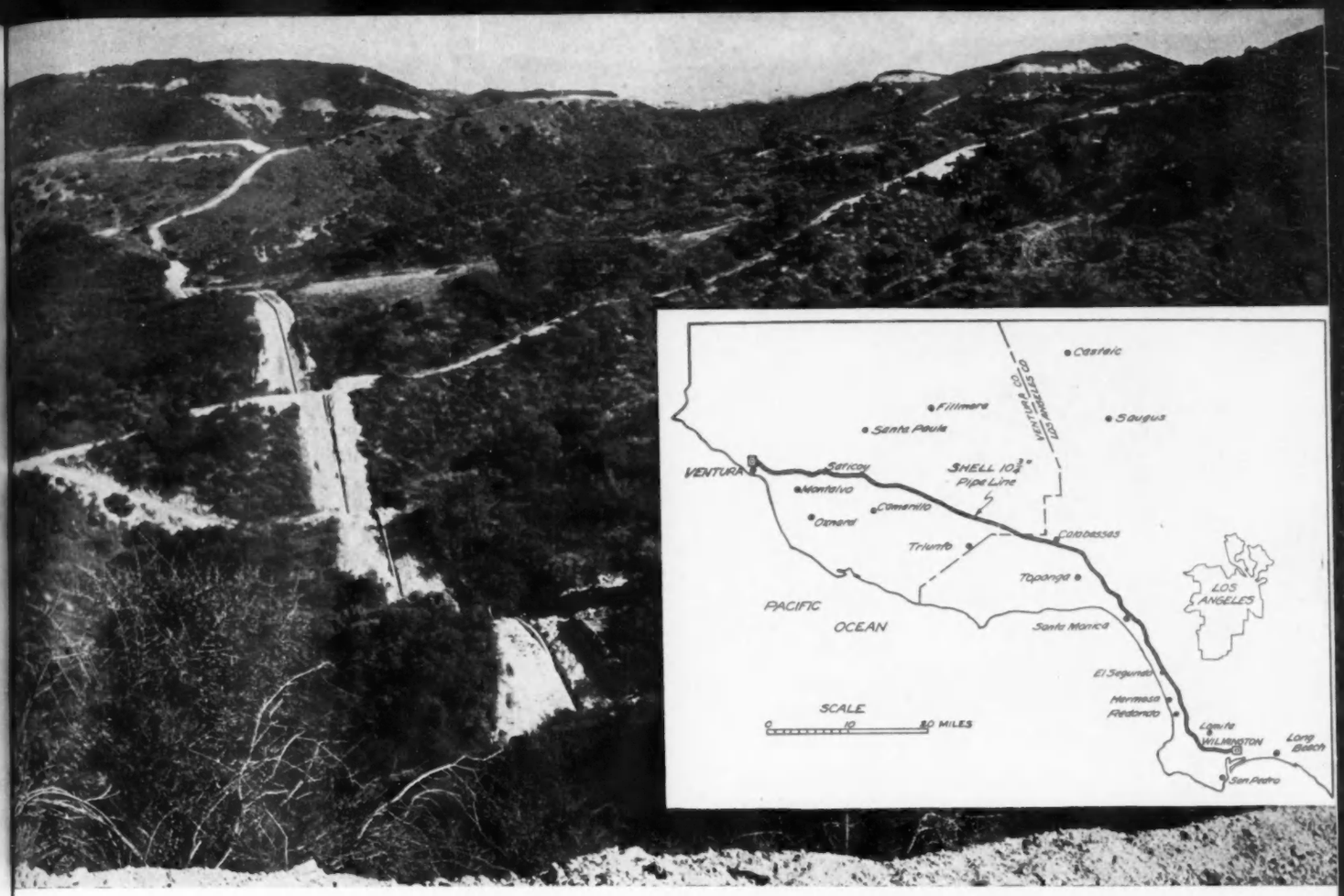
[*Continued on page 62*]

Total Oil Demand 14.9 Percent Greater in July Than Year Previously; Domestic Use Up 20.9 Percent; Similar Gains For First 7 Months 7.3 and 11.9 Percent

(Figures indicate barrels, and are from Bureau of Mines)

ITEM	JULY 1940	JULY 1941	JULY Percent Change	FIRST 7 MONTHS 1940	FIRST 7 MONTHS 1941	FIRST 7 MONTHS Percent Change
SUMMARY—						
Total Demand	117,622,000	135,118,000	+ 14.9	830,560,000	886,930,000	+ 6.8
Daily Average	3,794,000	4,359,000	+ 14.9	3,900,000	4,184,000	+ 7.3
Exports:						
Crude Petroleum	5,607,000	2,412,000	— 56.9	32,022,000	18,205,000	— 43.1
Refined Products	6,219,000	4,703,000	— 24.4	49,935,000	35,086,000	— 29.7
Total Exports	11,826,000	7,115,000	— 40.8	81,957,000	53,291,000	— 34.9
Domestic Demand:						
Total Domestic Demand	105,796,000	128,003,000	+ 20.9	748,603,000	833,639,000	+ 11.3
Daily Average	3,413,000	4,129,000	+ 20.9	3,515,000	3,932,000	+ 11.9
TOTAL DEMAND FOR PRODUCTS						
Motor Fuels:						
Domestic	53,865,000	63,093,000	+ 17.1	332,487,000	372,019,000	+ 11.9
Exports	1,686,000	[1]1,416,000	— 16.0	14,776,000	10,830,000	— 26.7
Total	55,551,000	64,509,000	+ 16.1	347,263,000	382,849,000	+ 10.2
Aviation Gasoline:						
Domestic	689,000	1,253,000	+ 81.8	3,091,000	5,438,000	+ 75.9
Exports	210,000	[2]153,000	— 27.1	2,102,000	2,267,000	+ 7.8
Total	899,000	1,406,000	+ 56.4	5,193,000	7,705,000	+ 48.4
Kerosene:						
Domestic	4,257,000	4,270,000	+ 0.3	39,305,000	39,315,000	+ 0.02
Exports	227,000	110,000	— 51.5	2,518,000	912,000	— 63.8
Total	4,484,000	4,380,000	— 2.3	41,823,000	40,227,000	— 3.8
Gas Oil & Distillate Fuels:						
Domestic	7,223,000	[3]10,946,000	+ 51.5	92,110,000	103,936,000	+ 12.8
Exports	1,837,000	1,164,000	— 36.6	13,163,000	7,990,000	— 39.3
Total	9,060,000	12,110,000	+ 33.7	105,273,000	111,926,000	+ 6.3
Residual Fuel Oils:						
Domestic	23,990,000	[4]28,887,000	+ 20.4	193,047,000	214,788,000	+ 11.3
Exports	1,387,000	954,000	— 31.2	9,097,000	7,727,000	— 15.0
Total	25,377,000	29,841,000	+ 17.6	202,144,000	222,515,000	+ 10.1
Lubricants:						
Domestic	1,871,000	2,954,000	+ 57.9	13,677,000	17,997,000	+ 31.6
Exports	741,000	735,000	— 0.8	7,500,000	5,440,000	— 27.5
Total	2,612,000	3,689,000	+ 41.2	21,177,000	23,437,000	+ 10.7
Wax (thousands of pounds):						
Domestic	30,333	47,603	+ 56.9	177,218	290,919	+ 64.2
Exports	8,992	16,740	+ 86.2	138,798	95,836	— 30.9
Total	39,325	64,343	+ 63.6	316,016	386,755	+ 22.4
Coke (short tons):						
Domestic	120,300	126,700	+ 5.3	789,700	877,000	+ 11.1
Exports	20,100	22,500	+ 11.9	137,100	143,200	+ 4.4
Total	140,400	149,200	+ 6.3	926,800	1,020,200	+ 10.1
Asphalt (short tons):						
Domestic	658,100	814,900	+ 22.8	2,543,500	3,210,600	+ 26.2
Exports	25,000	18,700	— 25.2	182,700	141,000	— 22.8
Total	683,100	833,600	+ 22.0	2,726,200	3,351,600	+ 22.9
oad Oil:						
Domestic Demand	1,629,000	1,822,000	+ 11.8	4,016,000	4,395,000	+ 9.4
Miscellaneous:						
Domestic	215,000	307,000	+ 42.8	1,115,000	2,003,000	+ 79.6
Exports	72,000	48,000	— 33.3	696,000	353,000	— 49.3
Total	287,000	355,000	+ 23.7	1,811,000	2,356,000	+ 30.1

[1] Includes 1,000 barrels benzol. [2] Includes 8,000 barrels anti-knock compounds.
[3] Includes 663,000 barrels Diesel bunker oil. [4] Includes 1,842,000 barrels bunker fuel oil.



Pacific Coast Line Constructed Speedily Despite Difficult Terrain

By GILBERT M. WILSON, Staff Writer

BELIEVED to be one of the most difficult overland pipe lines ever laid, Shell Oil Company's $2,000,000, 10¾-inch crude oil line extending from Ventura to Wilmington in Southern California has been completed in less than two months. Started August 5, the 84-mile line was completed and the final joint welded amid appropriate ceremonies, October 3. The right-of-way takes in nearly every conceivable type of terrain, ranging from almost vertical cliffs near Ventura Avenue field, through rolling hills, on up into a 25-mile section of the very precipitous and rugged Santa Monica mountains in the more central portion of the route, then down along the Pacific Ocean side of the slope through the estates of fashionable mountain residences, across golf courses, a polo field, then across the busy boulevards, streets, public utility lines and private properties of the beach cities of Santa Monica, Venice, El Segundo, and finally terminating at the Watson refinery of Shell Oil Company in Wilmington. So rugged and difficult was the greater part of the route that special pipe-handling equipment and technique had to be developed.

The construction of the pipe line is particularly significant at this time because of the threatened shortage of petroleum products in certain parts of the Pacific Coast states caused by the diversion of many coastwise tankers. Heretofore the only means of transporting crude oil from the Ventura Avenue and other nearby coastal fields was by tankers, which carried the oil to the refineries in the Los Angeles Harbor district. The tankers formerly employed in this short coastal run may now be diverted to other vital routes along the coast.

The present capacity of the line is approximately 22,000 barrels per day. With the addition of another pumping station to be installed at a later date near the point where the line enters the Santa Monica mountains, capacity is expected to be boosted to around 40,000 barrels per day.

The 10¾-inch line consists of standard weight API Grade B seamless 40.48-pound pipe. It was delivered with all but 8 to 10 inches of each end coated with a ½-inch

The slopes of some of the 200- to 600-feet deep canyons were exceptionally steep. It was necessary to keep a heavy tractor in readiness at all times in order to lower and pull up the ditching machine, welding trucks, and at times even the sideboom tractors. Blasting had to be resorted to in a number of places where hard formations were encountered.

asphaltic coating. This coating was prepared with a special air-blown asphalt and primer supplied and especially formulated for these conditions by Shell Oil Company's Martinez refinery. It was provided with extremely tough and elastic properties so that it would withstand the severe bending to which the pipe had to be subjected in the precipitous areas. It is particularly resistant to any corrosive actions that may be encountered in the soil. Most of the pipe was bent in the field, but in a number of instances pre-fabricated bends were prepared and coated in the plant before being sent out to the several points along the line where it was not convenient or practical to make sharp bends on the location.

The contract for the pipe line was let to Macco-Robertson Company, pipe line contractors, of Los Angeles. Extremely rough conditions made it necessary to use some of the heaviest of available tractor equipment. For preparing the right-of-way ahead of the ditcher, eight diesel angle dozers were used. Eight tractors were employed for handling the pipe, along with two new tractors which were fitted with special equipment for carrying, placing and bending of the pipe in some of the more difficult sections of the route. Crane trucks and somewhat smaller equipment were used in residential and business sections.

Started at Seven Different Points

Work was started simultaneously at seven different points along the line between Ventura and Wilmington. Each of these divisions, or "spreads," was equipped to handle every phase of the laying operations, from clearing the right-of-way to back-filling the ditch after the line was laid. This method proved to be of a decided advantage because of the varied nature of the conditions. The equipment used on the more level or slightly rolling portions of the route was of a lighter type; a special technique and heavy equipment was needed in the mountainous region; and in the business and residential district sections, a still different technique of laying was needed, particularly in contending with the many problems of traffic, overhead power lines, buried public utility lines, and special tamping of the back-fill preparatory to the relaying of the pavement.

Right-of-Way Crew

The work of each spread started with the right-of-way crew. In this operation, dozers cleared off and levelled the 25-foot right-of-way as much as possible. In the mountainous portion of the route, heavy brush and local high spots were cleared off. Cuts and small roads were made on the slopes of steep canyons to permit the ditching and pipe-laying equipment to move along later with a minimum of difficulty or interruptions. Small level clearings were made at certain intervals as near as possible to the principal fire roads. These clearings later served as supply bases for pipe, fuel, water and miscellaneous equipment.

Difficult Ditching Problems

The ditching crew followed shortly after the right-of-way crew had completed their work. Ditch specifications called for a depth sufficient to allow the pipe to be covered with at least 24 inches of fill, even in the bottom of each of the many V-shaped canyons. This minimum depth was necessary in order to insure adequate protection to the line because of the ever-present danger of brush fires that in the past have spread through the area during the dry seasons. In order to eliminate a great many over and sag bends in the pipe, this minimum specification made it necessary to dig the ditch anywhere from one to three feet deeper than would have been ordinarily necessary.

The tough, hard slate and sandstone, and in some places, even

Multiply by 127,272

To make the eleven army cots you see here requires 128 feet of steel tubing, 195 feet of angle steel, 1073 feet of spring wire and 1933 feet of galvanized wire - not to mention rivets and other small pieces of steel.

Multiply these figures for 11 men by 127,272 and you have the amount of steel fabricated into beds for our new army of 1,400,000 men - a total of 451 million feet of material - 33,367 tons of steel.

Such an essential item as beds for soldiers is just one of the many defense uses for which much of the regular production of Youngstown mills is going now. This, of course, is in addition to the ever-increasing tonnage of special steels produced for armament.

Day and night, our plants are working to deliver every ton of steel possible.

25-27D

QUALITY — TRADE MARK — YOUNGSTOWN — SERVICE

Youngstown products include Pipe and Tubular Products - Sheets - Plates - Conduit - Bars - Tin Plate - Rods - Wire - Nails - Tie Plates and Spikes

THE

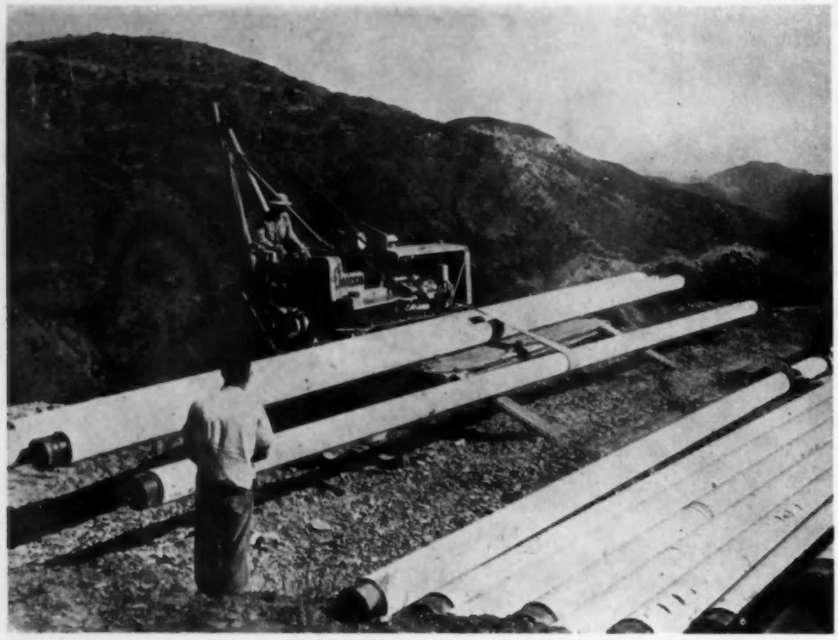
YOUNGSTOWN

SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steels

General Offices - YOUNGSTOWN, OHIO

THEY GET THE JOB DONE WITH

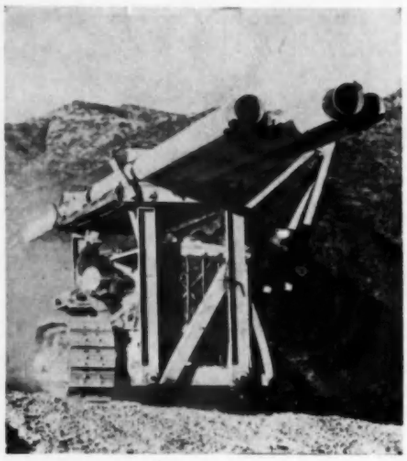


In order to carry pipe to many of the precipitous portions of the mountainous route, a specially-rigged combination loading hoist and pipe carrying rack had to be devised and built up on a heavy tractor. The loading rack may be lowered for loading, then pulled up and locked in place for hauling. The rack handles four of the 2600-pound, 40- to 44-foot lengths of pipe.

granite, through which the ditch had to be cut in the mountainous sector made for slow progress in these areas. At several points blasting had to be resorted to. Many of the slopes of some of the 200 to 600-foot deep canyons were so steep that it was necessary to lower and pull up the ditching machine with the aid of a winch-equipped tractor anchored at the top of the ridge. In narrow ravines, or other places where it was impossible to use the ditching machine, the ditch was dug by hand. At one point, the slope proved to be so steep that it was necessary to lower the workmen on ropes before they could dig a foothold preparatory to digging the ditch by hand. Other difficulties encountered included the necessity for having to confine the loose dirt by cribbing alongside the open ditch, in the small ravines which happened to be on the privately owned estates in certain of the mountain home areas.

Special precautions had to be taken in following the many rules laid down by the various cities and towns through which the line passed, and in which special easements had to be obtained in order to tear up the city streets, and temporarily disrupt traffic and communications.

After the ditch had been dug, the



stringing crew followed, distributing the lengths of pipe along the edge of the ditch in advance of the line-up crew. Special care was taken in the handling of the pipe so that the thick mastic coating would not be injured.

In the mountainous region, widely spaced fire roads that follow the tops of the narrow ridges were the only means of access to many long sections of the right-of-way. The steepness of the canyon walls—45- to 50-degree slopes were not uncommon—along with the almost impenetrable brush that grows in profusion in this region, made it impossible to use trucks for stringing or laying out pipe along the route. Since it would have taken too long for a side-boom tractor to carry the 40-foot lengths of pipe in singles or doubles from the local supply piles to points out along the right-of-way, a specially-rigged combination loading hoist and pipe-carrying rack was built up on a diesel tractor for the pipe-carrying job.

The device was designed so that the loading rack or platform could be lowered to within a foot or two of the surface of the ground beside the tractor for easy loading of the pipe. With the aid of a wide canvas belt, each joint was pulled up onto the platform, by means of a small power winch line. Four joints of pipe, each weighing about 2600 pounds, were placed on the rack platform, after which the entire load was winched to an upright position and locked in place above the tractor. Form-fitting clamps held the joints securely in place, so that in traveling up and down steep slopes, the load could not shift or slide off. Unloading of the individual joints along the right-of-way likewise was a comparatively easy and time-saving procedure.

Difficult Bends Made By Crew

The line-up crew consisted normally of two welders and their helpers; two side-boom tractors; two truck-mounted electric welding units; and a truck that hauled skids, water, and supplies to the crews. In the rougher territory, it was necessary to supply each tractor with two helpers, to assist in the difficult maneuvering required in laying, bending and general extra hauling work which the tractors had to perform along certain portions of the line. In addition to this, a winch-equipped tractor was kept in readiness at all times, to be used in pulling the welding trucks, and at times, even the side-boom tractors, up the particularly steep inclines, or to assist in performing difficult bending jobs.

Specifications called for a minimum of four layers or "passes" of welding material over each joint. The line-up crew, however, in laying straight pipe along the more level stretches, normally made only one pass, leaving the final welding operations for the regular welders following to the rear. Three passes usually were necessary if the new joint had to undergo any serious bending to make it conform to the contour of the ditch.

The two ends of pipe to be welded were aligned and held in place 1/16-inch apart by a steel clamp that was placed around the two bare ends, while the two welders tacked the ends together. The clamp was then removed and the welding continued.

Bends were made by using the two side-boom tractors in various ways, depending upon the type of bend that was necessary. Using special canvas belting or multi-strand rope slings so

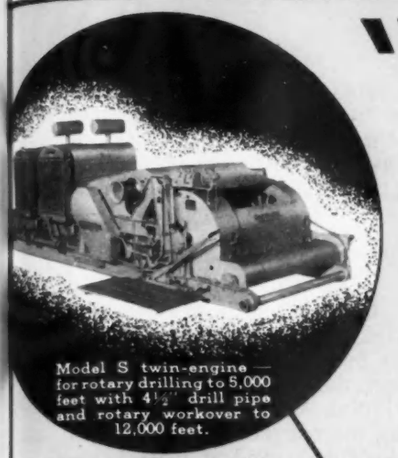
THEY GET THE JOB DONE WITH

"CARDWELLS"

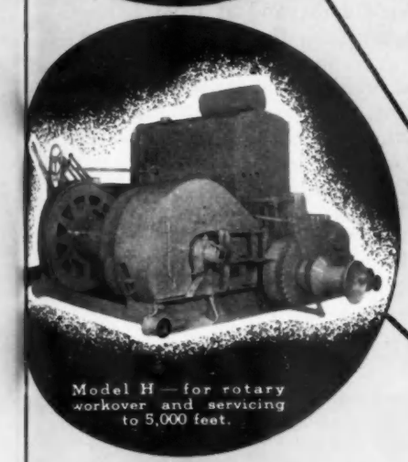
Work-Over, Inc., is one of the best and most completely equipped drilling and servicing companies on the Gulf Coast. Within the last seven months they have purchased the following "Cardwell" equipment: two twin-engine draw works, two single engine draw works, three servicing hoists and two 55-foot double leg servicing masts. They are fully equipped for rotary drilling to 5,000 feet with 4½" drill pipe and rotary workover and servicing to 12,000 feet.

They find that "Cardwell" equipment pays big dividends. Not only do they save on initial investment, upkeep and transportation costs, but time is saved on every job.

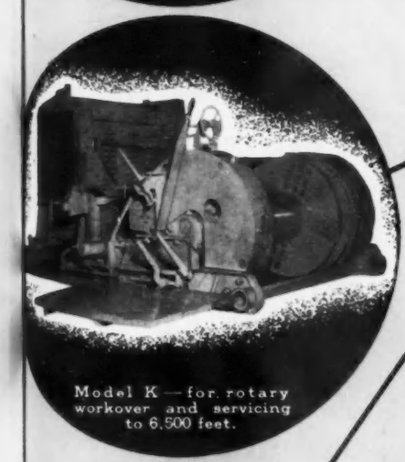
See your nearest "Cardwell" representatives, or write us direct, for complete information and prices on servicing hoists, combination drilling rigs, single and twin-engine draw works and drilling and servicing masts.



Model S twin-engine — for rotary drilling to 5,000 feet with 4½" drill pipe and rotary workover to 12,000 feet.



Model H — for rotary workover and servicing to 5,000 feet.



Model K — for rotary workover and servicing to 6,500 feet.

Model L — for rotary drilling to 3,500 feet with 4½" drill pipe and rotary workover to 8,000 feet.

JENNINGS, LA. HOUSTON, TEXAS

HARVEY, LA.

WORK-OVER, INC.
COMPLETE WELL SERVICING
MELLIE ESPERSON BUILDING
HOUSTON, TEXAS

September 4, 1941

Cardwell Manufacturing Co.,
Wichita, Kansas.

Gentlemen:

A little over six months ago we purchased our first "Cardwell" rig for workover jobs in the Gulf Coast. The first machine was a Model S twin-engine draw works. After watching it work for a few days we ordered a second Model S twin-engine draw works.

We have since expanded our equipment by purchasing two Model H hoists, one Model K hoist and one Model L draw works. Our latest machine is the Model T draw works which you recently shipped.

We have now worked over one 8700-foot well with this new machine and we are particularly pleased with its performance. It is big enough to handle deep wells and its simplicity and light weight make it adaptable to a wide variety of workover jobs.

With the five-speed, even-step, gear type transmission, and the outside "high drive" to the drum, coupled with the air-controlled friction clutches, you have a machine that is exceptionally fast and easy to operate and we believe this is one reason our operators like this "Cardwell" equipment so well.

We certainly believe that the new Model T "Cardwell" draw works is ideally adapted to workover jobs on the deep wells in the Gulf Coast and to medium depth drilling.

Yours very truly,

WORK-OVER, INC.

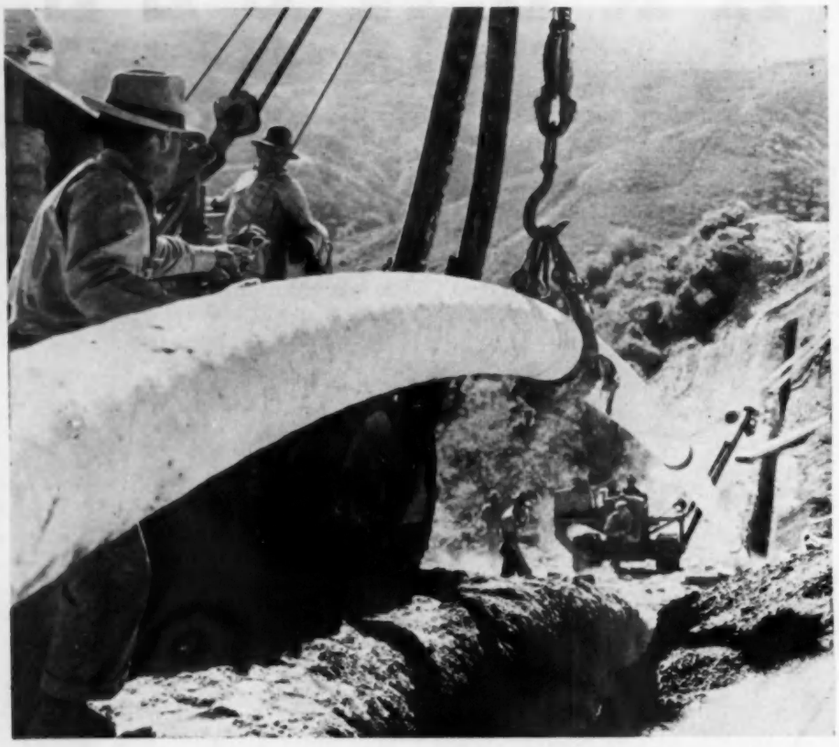
L. J. Maxwell
President

Model T — for rotary drilling to 5,000 feet with 4½" drill pipe and workover jobs to 12,000 feet.

CARDWELL ALLSTEEL
THIS TRADE MARK INSURES HIGHEST QUALITY AT LOWEST PRICE

CARDWELL MFG. CO. INC.
FORMERLY ALLSTEEL PRODUCTS MFG. CO.
P. O. Drawer 2001 - Cable Addresses "ALLSTEEL", WICHITA - "CARDSTEEL", NEW YORK
Wichita, Kansas, U. S. A.

EXPORT OFFICE
570 Lexington Avenue
Phone Plaza 5-9325
Cable Address "Cardsteel"
New York City, N. Y.



With the exception of some pre-fabricated bends that were used in some instances on more inaccessible spots, bends made in the field were made cold.

that a minimum of scarring would be caused in handling the mastic-coated pipe, side bends were affected by having the two machines pull in opposite directions from different positions on the joint. Over bends and sag bends were made by running one of the tractor units up over a bending block resting upon the pipe to serve as a hold-down, while the other tractor pulled upward on the other end.

In the bottom of V-canyons, and sharp side-turns in the mountains, an effort was made to use the pre-fabricated bends as much as possible. A number of sharp bends and turns were made on other more level sections of the line. Some of them were as high as 60 to 90 degrees, and made on a 20-foot radius. Several "holds" were made on the pipe on such turns to minimize the possibility of flattening the pipe at the bend.

At one place in the mountains, a particular slope was too steep to allow the boom tractors and welders to work satisfactorily, so it was necessary to weld the joints together one at a time on the ridge top, and slide the string of pipe down the slope as each joint was welded on. Six of the 40-foot joints were needed before the other end reached the bottom of the canyon.

After the pipe was welded and bent to conform to the ditch contour, it was laid on 4- by 5-inch skids placed across the top of the ditch. At each resting point, a half-filled sack of wood shavings was placed between the pipe and the skid in order to protect the mastic coating from the scuffing that usually resulted as new joints were addded and during the subsequent bending operations.

Brush Fire Hazards During Welding

The finishing welders followed soon after the line-up crew completed their portion of the job. In this operation, the welds were completed on each joint. According to the specifications, the completed welds had to be ¾-inch wide, and at least 1/16-inch higher than the surface of the pipe.

In the brushy areas in the hills and mountains, rigid precautions had to be taken, to see that no fires were started as a result of sparks flying from the welding operations. An extra man, deputized as a fire warden, whose sole duty it was to watch for and combat any such fires with special emergency fire fighting equipment, was stationed with each welding crew.

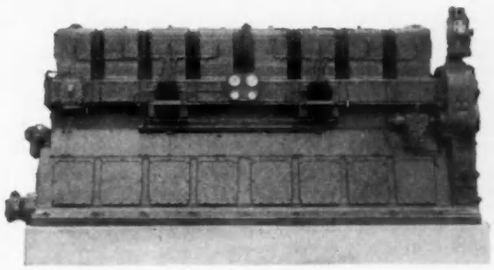
Electric cables 500 feet long were used by the welders of some of the field units, to make it possible to weld for some distance away from the generating units before having to lower the trucks down into the canyons, or move them around to the next ridge top.

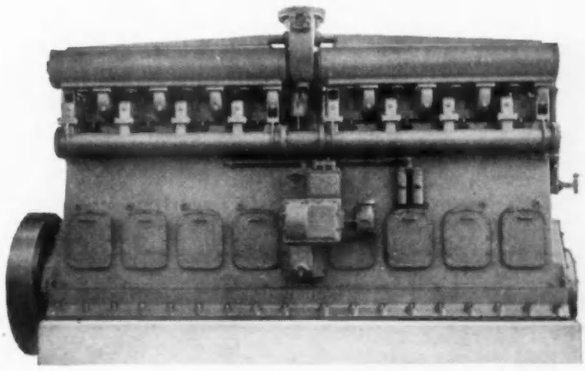
All joints were electric welded. In the mountainous sections, some of the welding units were equipped with 500-foot cables to eliminate as much as possible, lowering trucks into the steep canyons.

After all bending and welding had been completed, a mastic crew followed. Their job was to coat

PUMPIN' PROBLEM?

From pipeline to charging unit, there's a complete line of Cooper-Bessemer engines to power your pumps. Horizontals from 50 to 1500 horsepower, and verticals from 125 to 1000 . . . every one built for heavy-duty service.





Above . . . Type JS, built in 5, 6, 7 and 8-cylinder units, 375 to 675 hp.

At left . . . Type LS, built in 5, 6, 7 and 8-cylinder units, 575 to 1,000 hp.

Both are convertible . . . gas to diesel, or diesel to gas. Both have oil-cooled pistons, full-pressure lubrication, individual cylinder heads, patented fuel systems, and many other features.

THE COOPER-BESSEMER CORPORATION

MOUNT VERNON, OHIO — PLANTS — GROVE CITY, PENNSYLVANIA

the 16- to 20-inch gaps or bare ends of the welded joints, as well as to locate and patch over all spots in the coating along the body of the pipe that had been damaged during previous operations.

A special mold was clamped around each joint, after which the heated asphaltic material was poured around the bare metal inside the mold. After squeezing out and removing the excess material, the coating was allowed to cool and become firm, after which the mold was removed.

The final operation before the pipe was actually lowered, was performed by the mucking crew. This crew of men, working in the ditch below the completed line, cleaned out all loose earth and rock that might have been caved in over the edge during all the previous operations.

Lowering Operations Critical

The lowering crew, equipped with side-boom tractors, then came along, picking up short sections of the line, removing the skids and sawdust-filled sacks, and lowering the pipe into the ditch. Another important function of this crew was to make a final check on the condition of the all-important mastic coating. They were equipped to make minor repairs on any damaged places that might have escaped the inspection of the mastic crew.

Lowering the line was a critical operation in the mountainous interval of the right-of-way. Because of the steepness of the ridges, it was necessary to lower the line during only the coolest part of the day, when the pipe would have reached the maximum of its normal range of contraction. The crew ordinarily started work at 5 o'clock in the morning, and stopped lowering pipe at around 11. It was very important that the pipe should lie snugly in the ditch on the slopes, but on the point or summit of each ridge-top it had to be approximately 8 inches above the bottom of the ditch. This precaution was intended to relieve the line of any strains that might have been set up, caused by a downward shifting of the line at some later time.

Along city streets and when crossing certain heavily travelled boulevards, a special horizontal rotary boring machine was employed in digging culverts through which the pipe line passed. A 16-inch pipe culvert was used in a majority of the crossings of this type.

Unusual Problems Overcome

Considering the varied and difficult problems that had to be contended with, completion of the line in less than 60 days speaks well for the extent to which the planning and engineering were carried out before and during that period. The average rate of speed for the entire line was slightly less than 1½ miles per day, so it can be readily seen that certain of the spreads had to greatly exceed that rate in order to make up for the slower time realized by the crews working along the difficult mountainous portions of the route.

On one 10-hour day, the line-up crew of one of the spreads working in the Santa Monica Mountains was able to weld and bend only 16 joints, because of having to bend nearly every joint, in a particularly difficult place. Twenty-five to 40 joints per day was the average rate of speed of laying in other parts of the mountainous sectors.

A veteran pipe line foreman on one of the spreads working in the mountains made the statement that this was the most difficult pipe line that he had ever been on. His many years of experience on difficult lines throughout the country, in South America, and other foreign countries, was the background on which he based his opinion.

Delays and interruptions beyond the control of the contracting company were not infrequent. At one time work was shut down by the fire warden, because of the fire hazard created by a high wind. Another spread had to postpone work along a large golf course from one week-end to the following mid-week, in order that many of the week-end players might not have their games interrupted. In the hills northwest of Hollywood, where the right-of-way ran through a portion of the Warner Brothers lot, the crews of one spread had to work during the filming of some of the scenes of "Custer's Last Stand."

Coating the pipe where the ends were welded. The hot asphaltic mastic material was poured into a special mold clamped around the pipe at that point.

22,000 B/D Capacity Pumping Station

The crude oil will leave the Ventura pumping station at 1000 pounds pressure. For the present this will be the only pumping used to boost the oil up over the 1800-foot highest point along the right-of-way in the Santa Monica mountains. As mentioned elsewhere, a second pumping station will be installed at a later date to increase the present capacity of 22,000 barrels to 40,000 barrels daily.

Line Will Relieve Tanker Shortage

The Ventura pumping station consists of three 4-inch centrifugal pumps, driven through step-up gears by three 6-cylinder, 275-horsepower gas engines. Three large fan-cooled radiators mounted outside the building, cool the jacket water of the engines.

Construction of this pipe line at this particular time will have far-reaching beneficial effects upon the tanker shortage emergency, particularly in the Pacific Coast areas, where many of the national defense industries are concentrated. Tankers that formerly shuttled back and forth on the short run between Ventura and Los Angeles, now will be transferred to the service of delivering finished products to Central and Northern California points, as well as to Oregon, Washington and from there to certain inland points, where a shortage of these products, particularly gasoline, is already being felt due to the lack of ocean-going tanker service.

THE CONTINENTAL SUPPLY CO.

General Office: DALLAS, TEXAS

Foreign Sales Subsidiary

CONTINENTAL EMSCO COMPANY, Inc.

30 Rockefeller Plaza New York, N. Y.

Representatives:

LONDON MARACAIBO

BUENOS AIRES TRINIDAD

★ ★ ★ ★ ★

CONTINENTAL

SERVING THE OIL AND GAS INDUSTRIES

Effects of Sand Grain Size Distribution Upon Porosity and Permeability

By WILBUR F. CLOUD
Professor of Petroleum Engineering,
University of Oklahoma

IT IS common knowledge that local variation in the conditions of sedimentation in water causes vertical and lateral gradations within short distances in stream sand deposits. Also, local changes in the characteristics of texture and grain sorting may occur without cross-bedding or any chemical change in rock composition. Likewise, cores from producing sandstones which are similar in megascopic appearance may vary appreciably in permeability. It is not uncommon to find a variation in both porosity and permeability per foot of core depth. Furthermore, two cores having similar porosity may have radically different permeability.

The factors which affect the porosity of a sandstone are, as follows: (1) the character and amount of cementing and colloidal materials, (2) the hardness or degree of compaction, (3) shape of grains, (4) arrangement of grains, and (5) the *uniformity* of grain size or distribution. Uniformity of grain size and shape are important factors. For example, it can be demonstrated both physically and mathematically that, a gallon of No. 8 chilled shot will be just as porous as a gallon of No. 4 shot. But a 50-50 mixture of the two will have the least porosity.

Frequently very finely textured sandstones have a higher porosity than coarse sandstones, although the permeability of the latter will be much greater. Generally, if the grain shape is fairly similar throughout the various sizes and percentages of size distribution, porosity will increase and permeability will decrease as the *range* of finer sizes increases. For example, the average porosity of sandstones is 15.5 percent; whereas, that of silts and clays is 50 percent.[1] If two sizes of similar sand are mixed, the porosity and permeability can be made to vary with each other as the percent of each component size is made to vary above or below a 50-50 mixture.

Table 1 portrays the fact that porosity and permeability are not necessarily related. It shows also that capillary retention and adhesion, effective as a result of surface forces acting at the points of contact of sand grains, are appreciable in the finer sands. Equal weights of the same sand, having

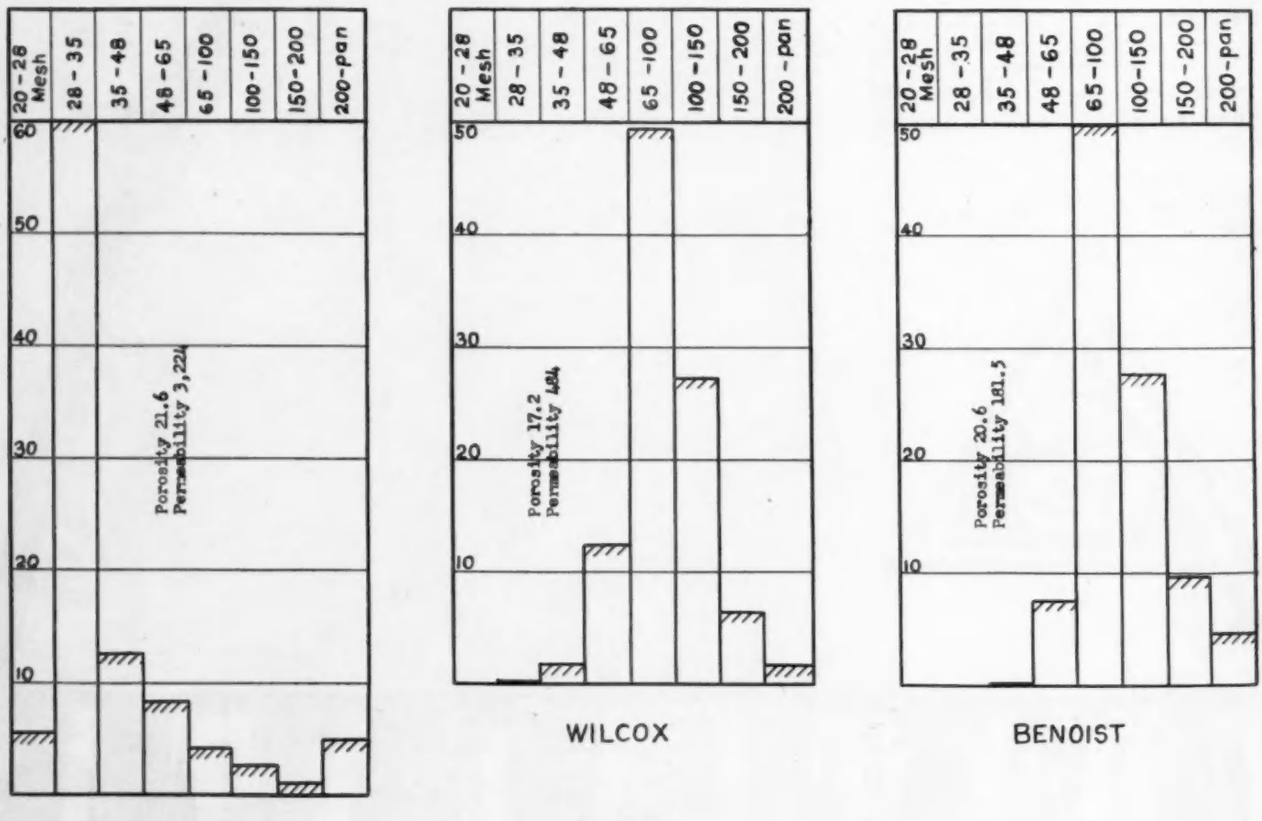
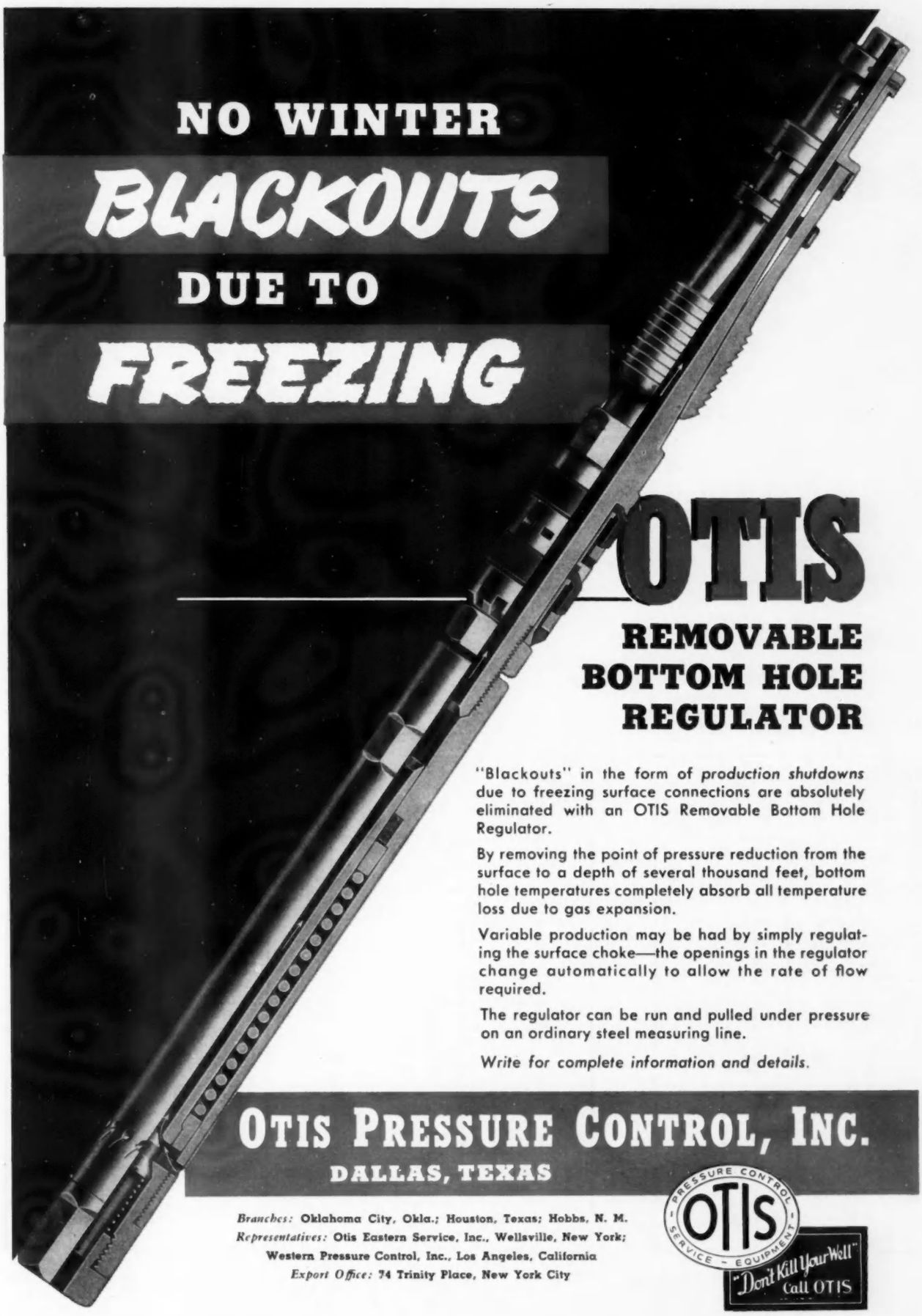


FIGURE 1

NO WINTER BLACKOUTS DUE TO FREEZING



OTIS
REMOVABLE BOTTOM HOLE REGULATOR

"Blackouts" in the form of *production shutdowns* due to freezing surface connections are absolutely eliminated with an OTIS Removable Bottom Hole Regulator.

By removing the point of pressure reduction from the surface to a depth of several thousand feet, bottom hole temperatures completely absorb all temperature loss due to gas expansion.

Variable production may be had by simply regulating the surface choke—the openings in the regulator change automatically to allow the rate of flow required.

The regulator can be run and pulled under pressure on an ordinary steel measuring line.

Write for complete information and details.

OTIS PRESSURE CONTROL, INC.
DALLAS, TEXAS

Branches: Oklahoma City, Okla.; Houston, Texas; Hobbs, N. M.
Representatives: Otis Eastern Service, Inc., Wellsville, New York; Western Pressure Control, Inc., Los Angeles, California
Export Office: 74 Trinity Place, New York City

PRESSURE CONTROL – OTIS – SERVICE – EQUIPMENT
"Don't Kill Your Well" Call OTIS

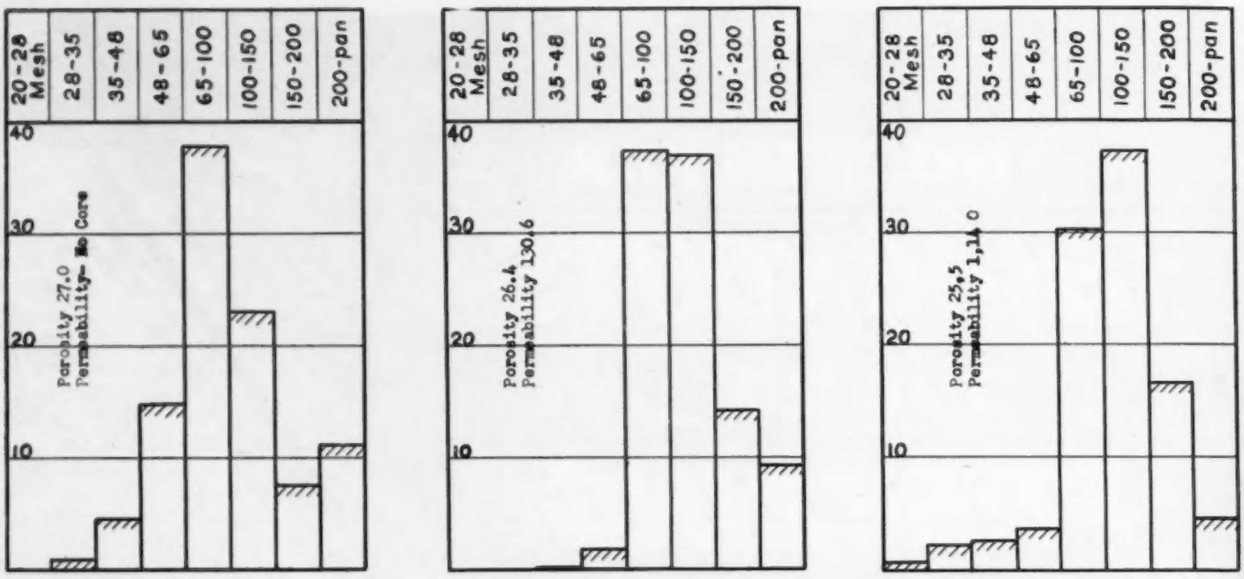


FIGURE 2

the mesh size mentioned, were packed into identical glass cylinders to two different porosities. Equal amounts of 30.5 centipoise crude oil was released at the top to gravitate through each sand column.

Sieve Analyses

Screened sizing of oil sands, in conjunction with microscopic study, can be used as an auxiliary means of formation correlation. Block diagrams and cumulative percentage curves portray anomolies and characteristics of sand porosity and permeability. Also, sizing by use of sieves aids in the choice of proper size of screened pipe or perforated liners for oil wells.[2,3]

Various bases or "starting points" have been used in sieve design. However, the 200-mesh base is most common. The ratio be-

TABLE 1

	20-28 Mesh	60-80 Mesh
Grams of sand used	663	663
Porosity of compaction	32.8	35.6
CC. of 40° A.P.I. crude oil used	96.0	96.0
Temperature maintained	85° F.	85° F.
Time of drainage of first drop	2 Min.	6 Min.
Gravity drainage after 20 minutes, CC	71.0	5.0
Gravity drainage after 50 minutes, CC	72.0	12.0
Drainage after 1 hr., 30 min., CC	73.5	19.0
Percent recovered by drainage after 42 hours	77.6	30.2
Percent retained by capillarity and adhesion	23.4	69.8

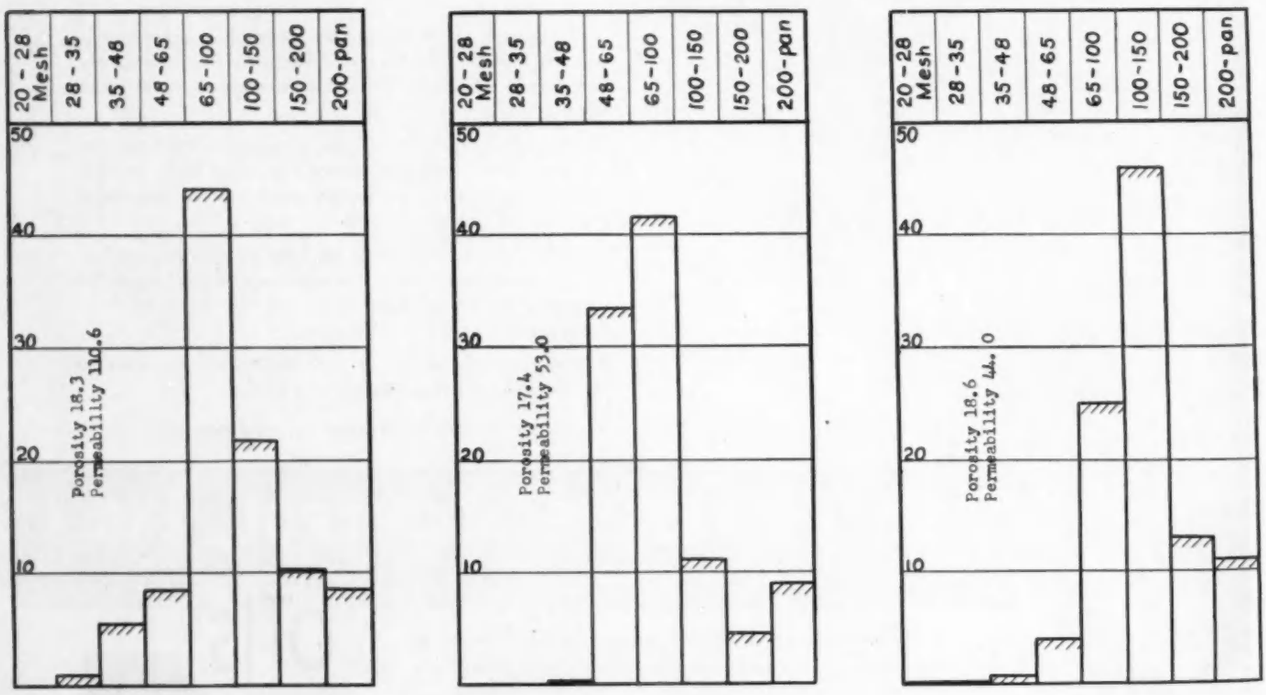
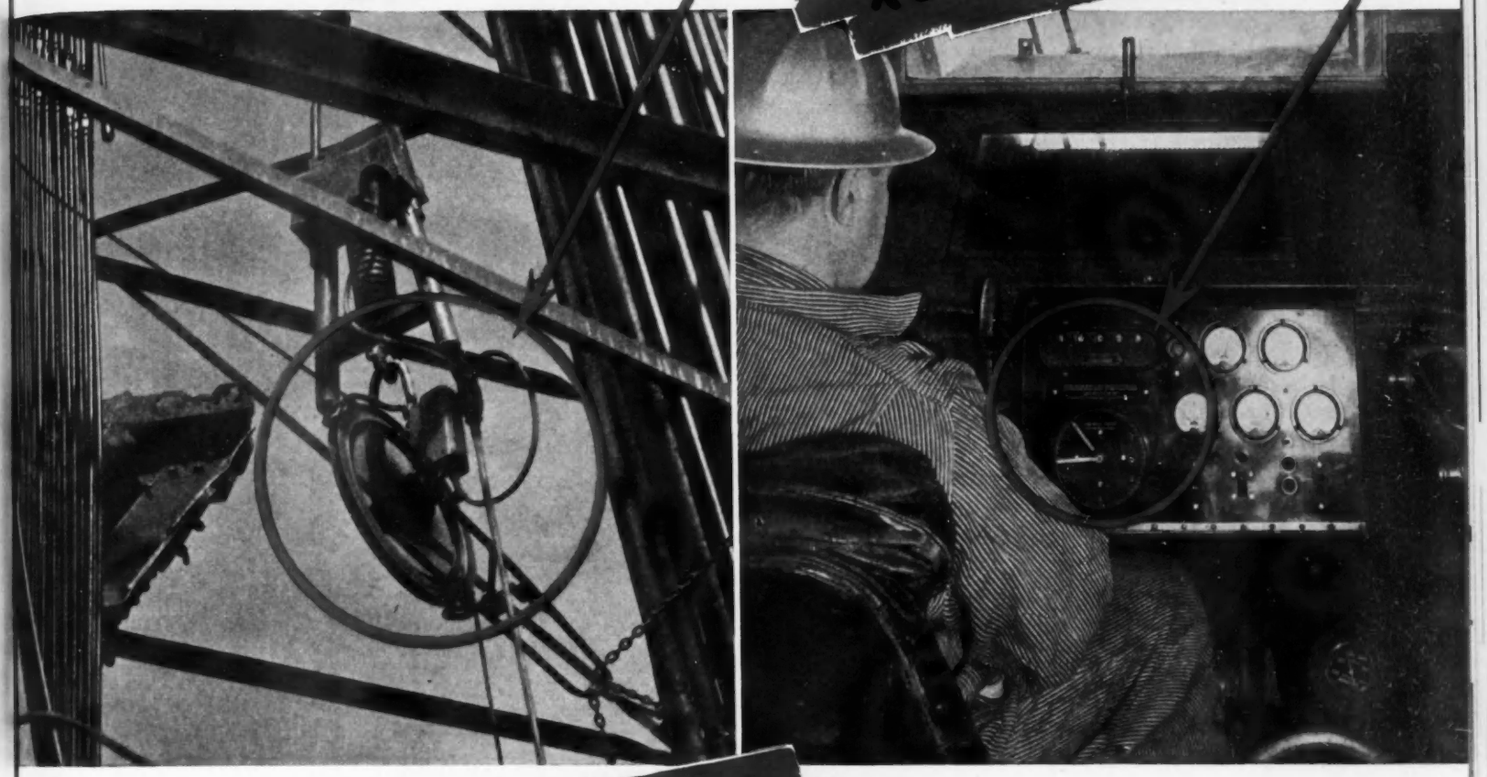


FIGURE 3

EVERY REVOLUTION HERE ... IS ACCURATELY RECORDED HERE



THAT'S WHY YOU CAN RELY ON LANE-WELLS FOR ACCURATE PLACEMENT OF GUN PERFORATIONS

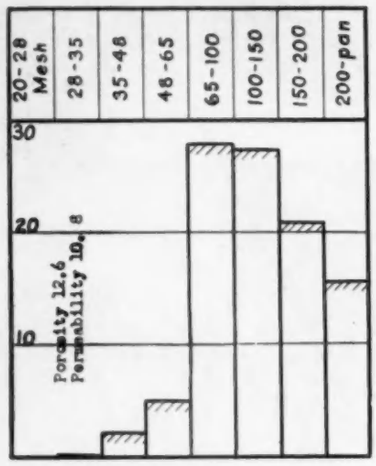
Every foot of cable travel over the accurately ground Lane-Wells measuring sheave registers on the odometer in the control compartment. The operator knows at all times exactly where the gun is located in the well. The weight indicating device is so sensitive that changes in fluid level between runs can be detected when the gun enters or leaves the fluid. Details of the operation of these two devices have become well known to oil well operators in almost every producing field during the past nine years. Operators have learned to rely on Lane-Wells depth measurements, consistently and carefully checked against their own figures. Operators can tell you, "Lane-Wells has the men and equipment to put Gun Perforations right where you want them." *Call* "LANE-WELLS" *and have the job done right!*

LANE-WELLS TECHNICAL OILFIELD SERVICES *Everywhere*

tween the different sizes of sieves has been adopted as being $\sqrt{2}$ or 1.414 for average materials. Then the width of opening of each successively larger sieve is exactly 1.414 times the openings of the smaller previous sieve in the series. This makes the surface area of each opening just double that of the next finer sieve or one-half that of the next coarser sieve. For very close sizing, a series can be had wherein the ratio of sizes varies as the $\sqrt[4]{2}$ or 1.189. The base in this case is 400-mesh. For sieving sediments which contain very little coarse and fine material, another $\sqrt{2}$ series can be used, as follows: 32, 42, 60, 80, 115, and 170-mesh.

For the average oil sandstone, the following series of 8 sieves is recommended:

MESH	Opening, Inches	Opening, Millimeters
20	0.0328	0.833
28	0.0232	0.589
35	0.0164	0.417
48	0.0116	0.295
65	0.0082	0.208
100	0.0058	0.147
150	0.0041	0.104
200	0.0029	0.074



BRADFORD

FIGURE 4

As an item of comparison and classification, it might be mentioned that, the minor axis of sand grains of medium texture varies from 0.0232 to 0.0082 inch; whereas, sands varying from 0.0049 to 0.0024 inch (115- to 250-mesh) are classified roughly as very fine. Particles smaller than 250-mesh (0.0024 inch) are classified as silts and clays.

For quick comparison and easy reading, sieve analyses can be reproduced as block plots or histograms, see Figures 1 to 4. By plotting sieve size openings as ordinates against cumulative percentages by weight on semi-log paper, the conventional cumulative frequency curve is obtainable, see Figures 5 and 6. The frequency distribution curve is a modified form of block diagram, and can be used to portray the "skewness" or lack of symmetry in grain-size distribution. A *normal* curve is parabolic in form, having a high node near the center, often in the region of 65-100 mesh, with approximately equal distribution of coarse and fine particles on either slope.

By arbitrary adoption, the term "effective size" is taken to mean that sieve size or opening which will just pass 10 percent of the sample. If we divide the size of opening that will just pass 60 percent of the sample by the effective size (10 percent), the "coefficient of uniformity" is obtainable. This is the same as the ratio of the size at the 40 percent intersection on a cumulative percentage curve to the size at the 90 percent intersection.

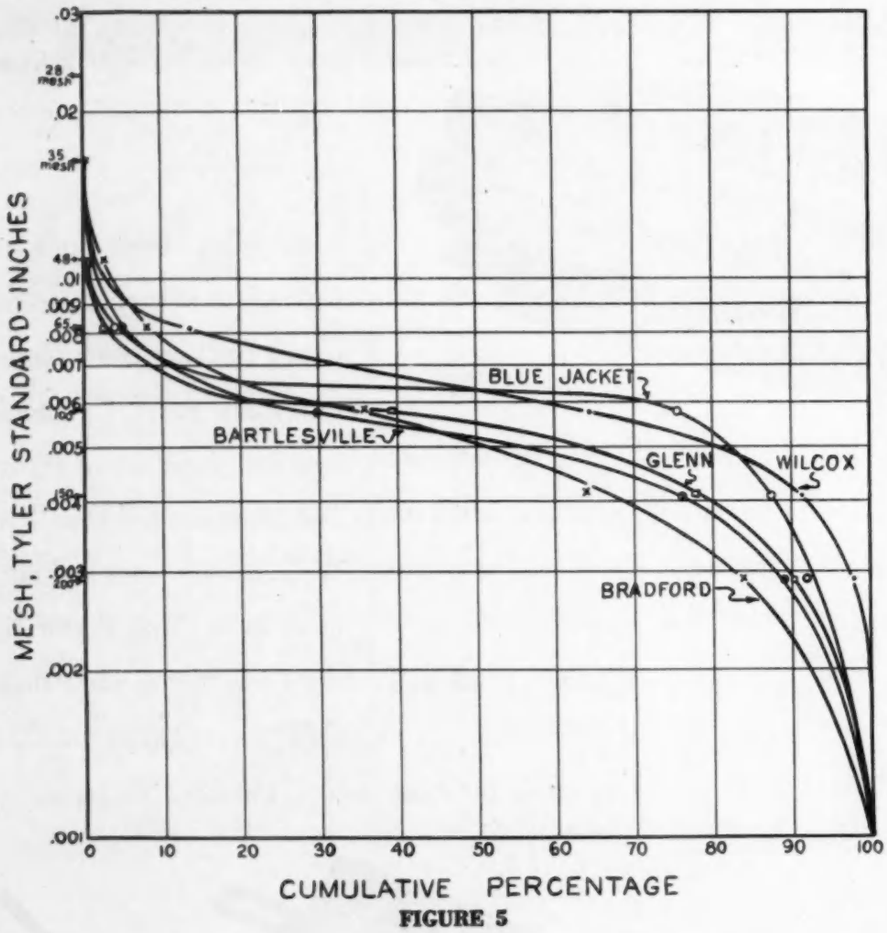
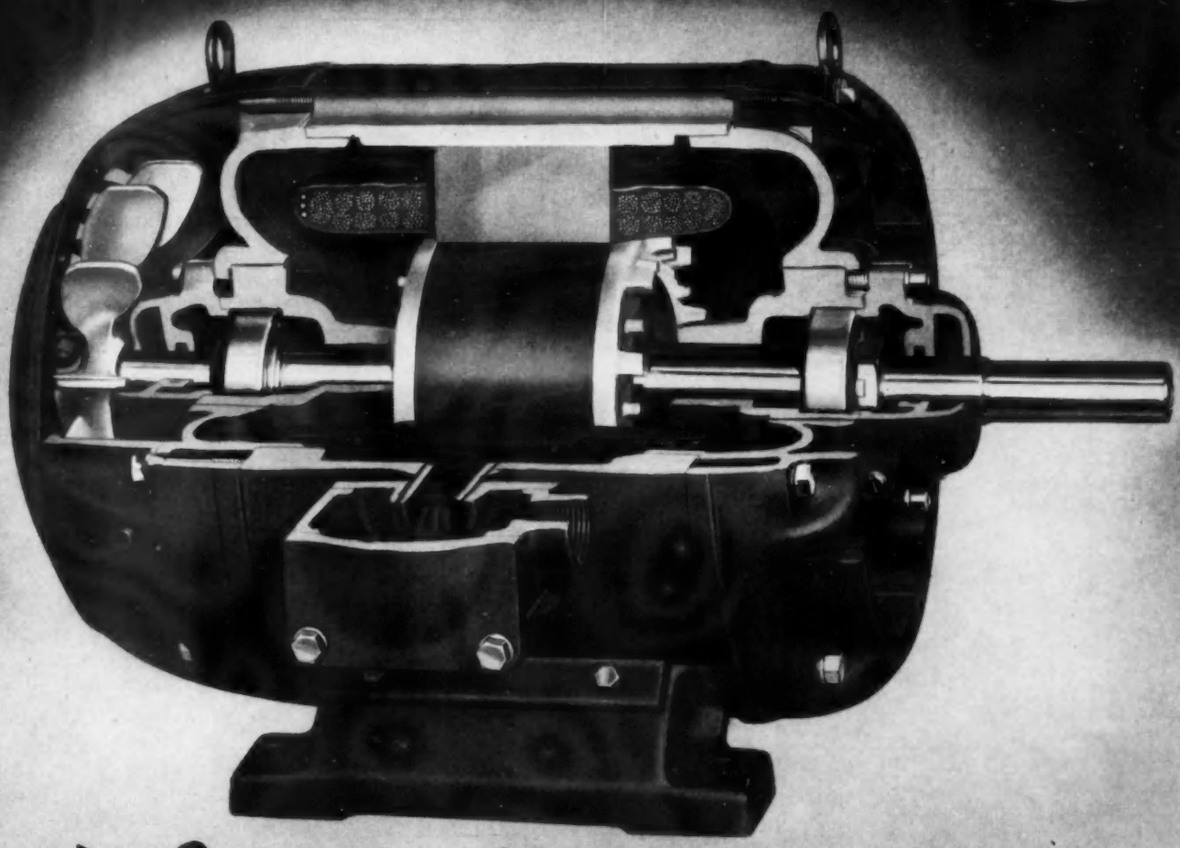


FIGURE 5

In friable oil sandstones of *moderate* compaction there seems to be a somewhat definite relation between porosity and the coefficient of uniformity. Visual inspection of block diagrams and curves of frequency distribution in some instances suggests the existence of a range of porosity and permeability. Higher porosity may be reflected by higher than normal percentages of small sizes to the right of center (skewness) in such diagrams. If the skewness is toward the left of center of a normal frequency distribution curve, an indication of high permeability is portrayed. This relationship is apparent when we recall that porosity does not depend upon absolute size, the uniformity of size distribution being the most important. However, it is doubtful if this relation can be consistently apparent in curves or plots of very hard sandstones, or where the cementing material is largely secondary silica. Sandstones containing appreciable amounts of shale, carbonates, or colloidal

LOUIS ALLIS



Look Inside!

The Louis Allis EXPLOSION-PROOF motor is built to withstand the force of the greatest explosion possible within its heavy iron walls—with a safety factor of *five!*

With a safety factor of FIVE—the Louis Allis Explosion-Proof has twenty carefully designed specific features—features that make available a new high in electric motor efficiency, dependability, convenience and—SAFETY!

We have prepared a sixteen page booklet which completely illustrates and describes all of these important features—write for your copy—ask for Bulletin No. 508-E.

LOOK INSIDE—compare Louis Allis Explosion-Proof motor point by point with any others on the market—and we are sure you will agree that—here is the finest explosion-proof motor ever built—bar none!

Specify your next explosion-proof motor by name—LOUIS ALLIS—you will be assured of the most complete protection and dependable performance available.

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

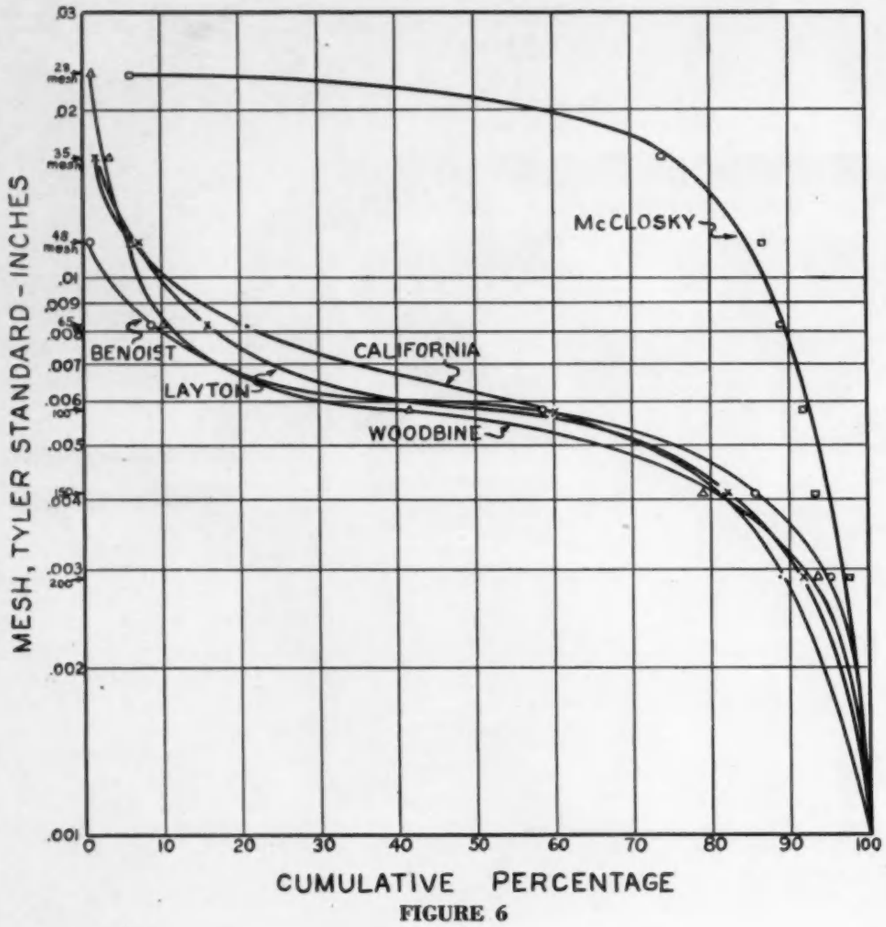


FIGURE 6

materials finer than 200-mesh may be very porous.

In an attempt to derive a deviation constant of size distribution as affecting porosity and permeability, as well as to visualize certain anomalies of curves and block diagrams, the writer examined representative cores from 10 different oil fields located in widespread areas of the United States. The producing horizons were, as follows: McClosky lime, Wilcox, Benoist, Woodbine, Layton, Bradford, Bartlesville, the Glenn of Southern Oklahoma, a sand from a deep well in Kern County, California, and the Blue Jacket sandstone (an outcrop sand, Bartlesville equivalent). No claim is made that the results are *average* values for the formations tested. They apply only to each individual core tested, which however, was considered typical of the field sand involved.

After the water and oil had been extracted, each core was dried, then drilled for a permeability sample. The scraps remaining were used for sieve analysis and porosity determination. Sieve samples were prepared by first crushing to pea size in a vise. Sieve separation of the coarse and fine particles at this stage provided coarser material for chemical separation by use of sodium acetate, and finer material for hand crushing or mild use of mortar and pestle. A bioncular microscope was used to determine when complete grain separation had been accomplished. Several preliminary sieve sizings were necessary for most of the samples. Each prepared sample was weighed, then placed upon the coarse sieve in the conventional nest of eight sieves in the series. Each sample was shaken for 45 minutes, using a commercial machine designed for this work. Porosities were determined by using a modified Washburn-Bunting process. Permeabilities were determined in the conventional manner, using dried air at several differential pressures.

The comparative results of all tests have been compiled graphically as Figures 1 to 6. The McClosky cumulative percentage curve (Figure 6) is typical of oolitic limestones. The permeability is very high, but the porosity is not what we might imagine unless we recall that there is a lack of correlation between these two properties. Of the entire group, the Woodbine sand shows the best correlation between high porosity and high permeability, see Figure 6. This is typified on a block diagram (Figure 2) by an appreciable coarse size distribution and a broad "node" in the region of 65 to 150 mesh. The abnormal amounts of silt and colloidal material in the region of the 150-pan sizes of the Benoist, Bartlesville, Glenn, and the California sand is indicative of higher than average (15.5 percent) porosity. On the contrary, the same conclusion is misleading for the Bradford sand, the cementing material of which is primarily secondary silica. Also, the Bradford sand is too hard to be crushed accurately. The block diagram of the Layton sand portrays good porosity and fair permeability. One might expect low permeability through the Bradford, Bartlesville, and Blue Jacket sands after inspection of the curves and block plots. Perhaps the Wilcox sand portrays the best "balanced" plot of the group.

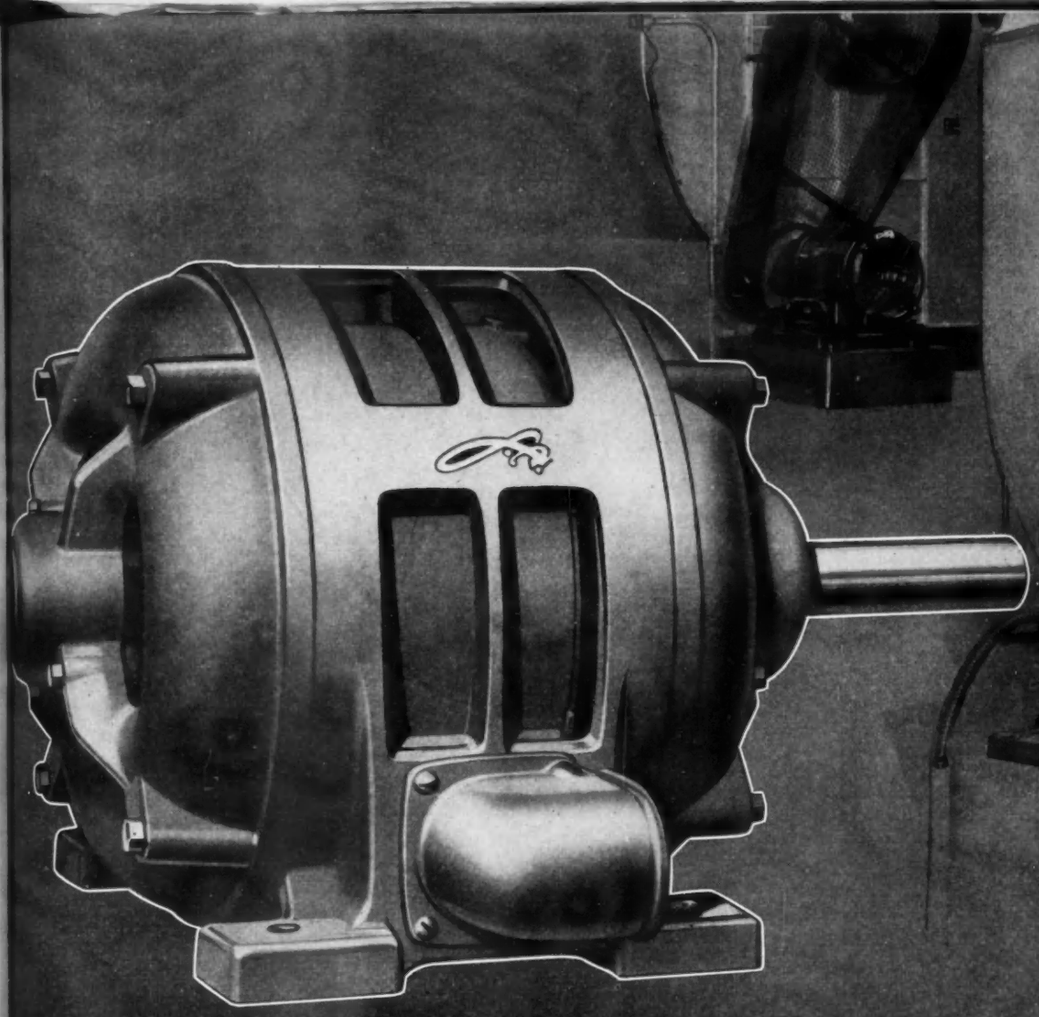
As a result of these physical examinations, the writer believes that for the average angular-grained sandstone of medium hardness, when the ratio of the sum of the two smallest size percentages to the percentage retained on the 100-mesh (region of normal node) is 0.50 or more, the permeability will be fair to good, and the effective porosity will be 20 percent or greater. A ratio lower than 0.50, of course, will usually indicate a porosity less than 20 percent and low permeability, depending upon grain shape and character of cementing material.

REFERENCES

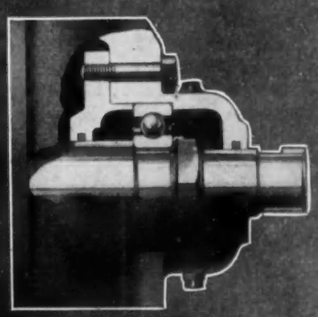
[1] Meinzer, O. E., The Occurrence of Ground Water in the United States—U. S. Geol. Sur. Water Supply Paper 489.

[2] Wilson, C. S., Selection and Use of Screened Pipe—Amer. Inst. Mining Engineers Transactions Vol. 103, p. 116.

[3] Coberly, C. J., Selection of Screen Openings for Unconsolidated Sands—Amer. Pet. Inst., Drilling and Production Practice, 1937, p. 189.



Standard



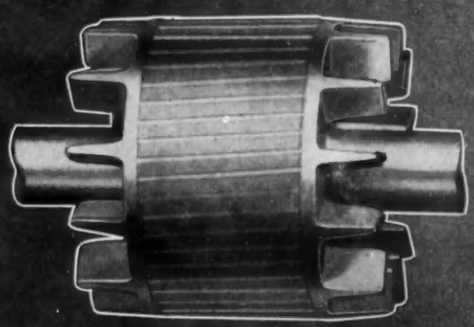
Louis Allis Standard Open Squirrel Cage Polyphase motors are simple in construction—ruggedly built—and are designed for a life-time of dependable trouble-free performance on the toughest jobs.

The rigid one-piece heavy cast iron housing prevents tortion and assures even air gaps, and a well balanced smooth running motor under most severe operating conditions.

Full-size precision bearings and one-piece, dynamically balanced, pressure cast rotor are additional quality features of this motor.

There is a size and type Louis Allis squirrel cage motor for every industrial need.

Write for copy Bulletin 505 fully describing and illustrating the construction features of Louis Allis Squirrel Cage Motors.



THE LOUIS ALLIS CO., MILWAUKEE, WIS.

High-Gravity Crude Oil Stabilized Through Unit Plant

By FRANK B. TAYLOR, Staff Writer

ADVANCED design and improved production technique have been applied at Medicine Bow, Wyoming, to overcome unusual field conditions. High formation pressures, severe climatic conditions, and exceptionally high oil gravities have necessitated a number of departures from standard practice. Both a separator bank and a stabilization plant are employed as part of the producing layout. The plant, with a capacity of 6000 barrels per day, incorporates streamlined control while production methods have been altered to meet the problems of handling unstable crude oil at high pressures from two strata.

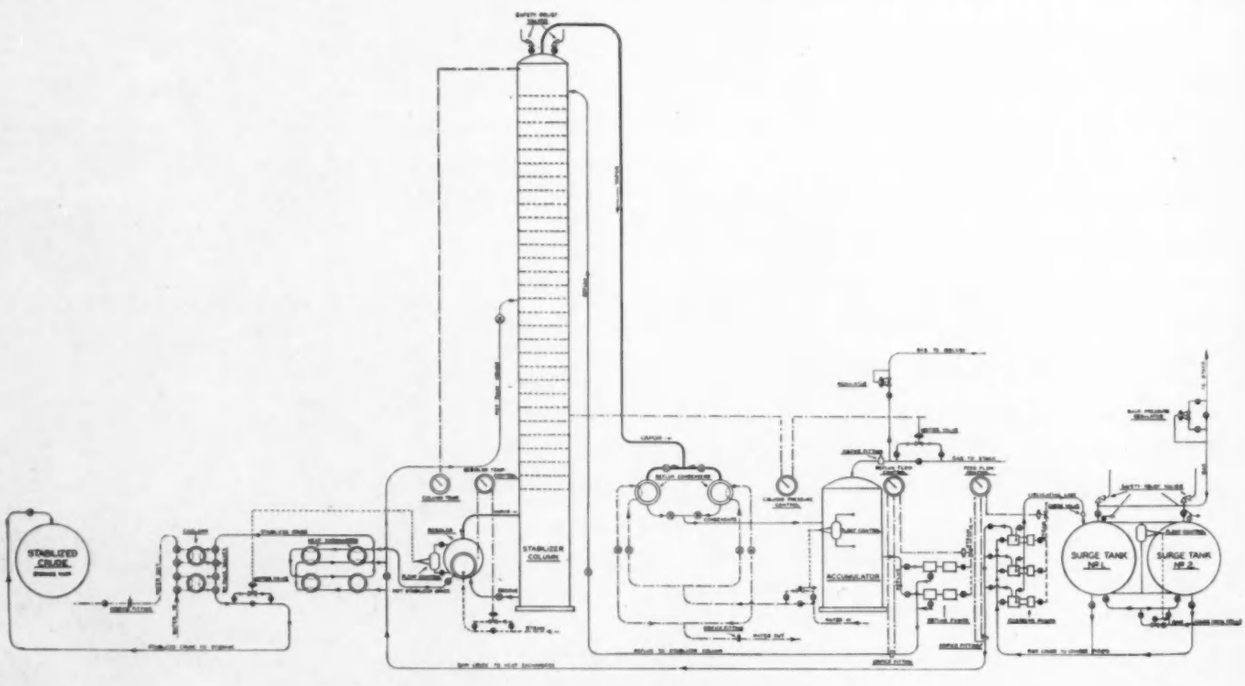
Production is from Sundance (Upper Jurassic) sands at 5200-5500 feet. Formation pressure is utilized to flow the oil through high-pressure lead lines to a central receiving house where separation is obtained; contrary to general field custom there are no separators or usual control equipment at the wells. Following separation the oil passes into stabilization plant. High gas volumes, crude gravities above 63 degrees API, and edge waters have required close production control not only to assure a high ultimate recovery but also to conserve reservoir energy. Industrial, domestic and other demands for natural gas produced with the oil have excluded application of a repressuring program.

After five years' operation both the manner of producing the light oil, the method of stabilization, and the results of reservoir control have proven satisfactory. While minor changes have been made during the interim, the layout remains essentially as designed.

Located in Carbon County, southeast Wyoming, at an elevation of 7400 feet, Medicine Bow is an elongated anticline readily apparent as a pronounced topographic high. Ten sections are embraced within the lowest closing contour with production confined to 800 acres in Sections 23-, 25-, 26-, 35- and 36-21n-70w. The structure has a surface closure of 2900 feet. The field is operated by The Ohio Oil Company, under a 50-50 working agreement with The California Company.

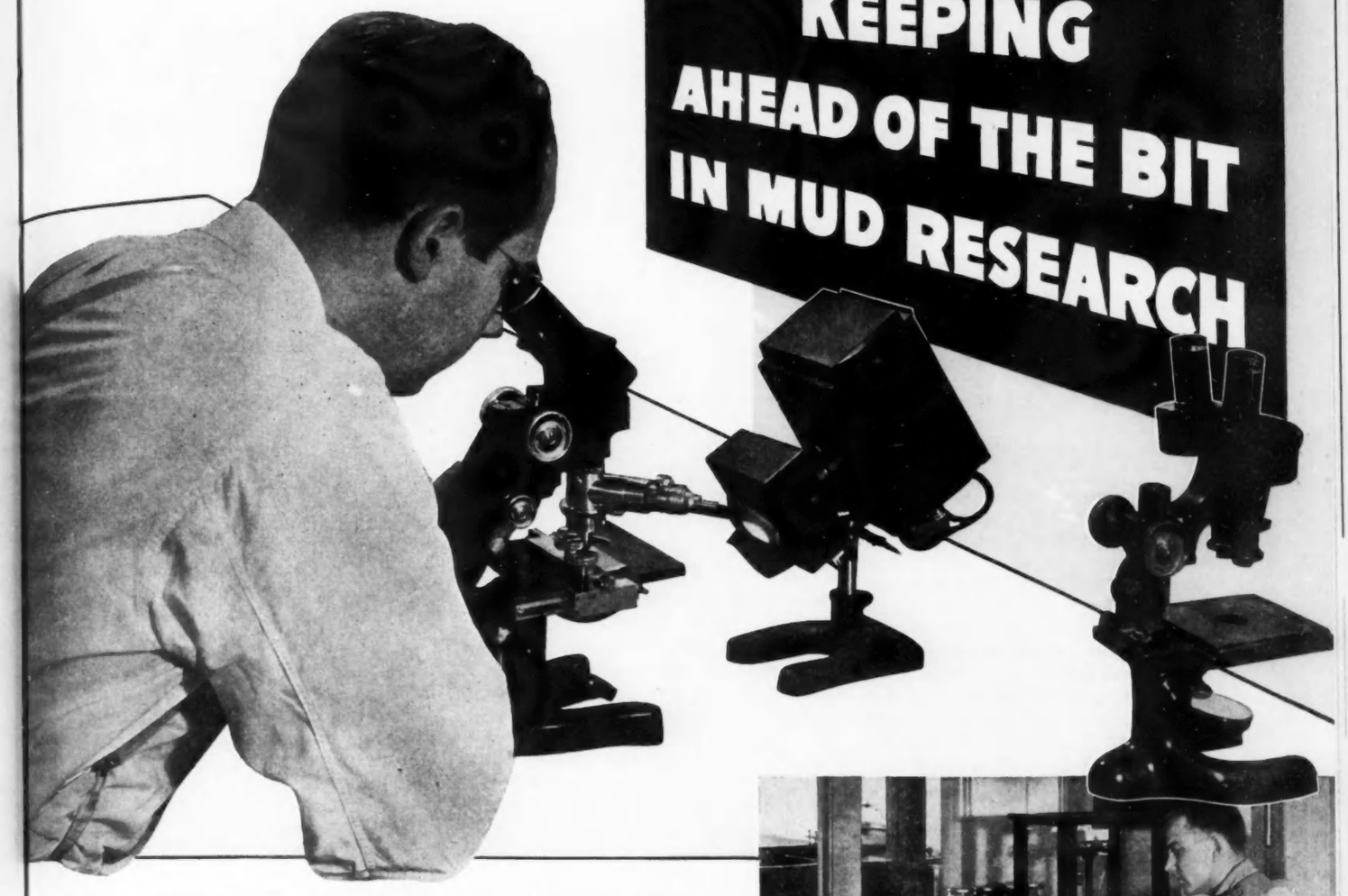
The feature was first mapped by surface geology; was then the focal of extensive seismographic work in 1934. The Ohio Oil Company made a test in NE 26-21-79, being scheduled to test deeper horizons, as seven non-commercial wells had already penetrated the shallow strata. The well, Kyle 1, completed June 7, 1935, and on initial test made 81,000,000 cubic feet of wet gas from the first pay and 265 barrels of 63-API-gravity oil from the second pay. This test earned for the area the distinction of producing oil of the highest gravity ever produced in the Rocky Mountain region.

With the exception of an offset to Kyle 1, the field has been developed on 40-acre spacing. Four-



Flow Diagram of the Stabilizing Plant

KEEPING AHEAD OF THE BIT IN MUD RESEARCH



SPECIAL RESEARCH PROBLEMS REQUIRE SPECIAL EQUIPMENT

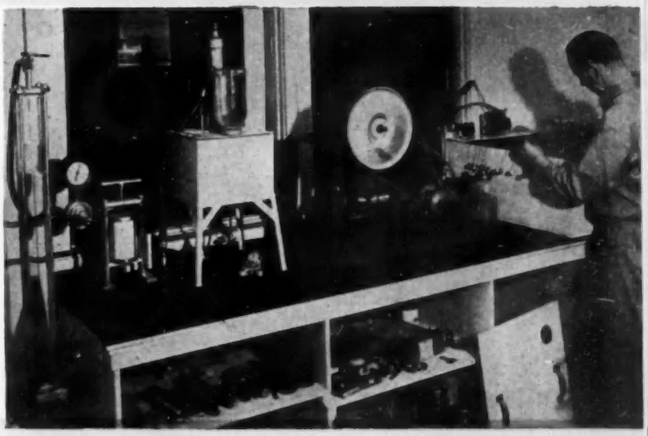
Complex drilling problems incidental to modern deep drilling are studied by Baroid engineers with the aid of equipment especially designed to analyze or reproduce conditions encountered or anticipated in the field.

While standard equipment and standard methods give valuable results, new equipment is constantly being designed and built in Baroid laboratories in a continuous effort to obtain greater information, provide new products, and improve existing materials and methods.

This apparatus represents the comprehension in the laboratory of the mud problems encountered in the field.

Operators everywhere benefit from this painstaking laboratory procedure in that Baroid field engineers are kept abreast of the latest developments in mud technology and that Baroid products are constantly being improved to make for safer, faster, and more economical drilling.

ONE OF MANY STEPS IN CLAY RESEARCH



PART OF THE APPARATUS FOR TESTING OIL WELL CEMENT

BAROID SALES DIVISION

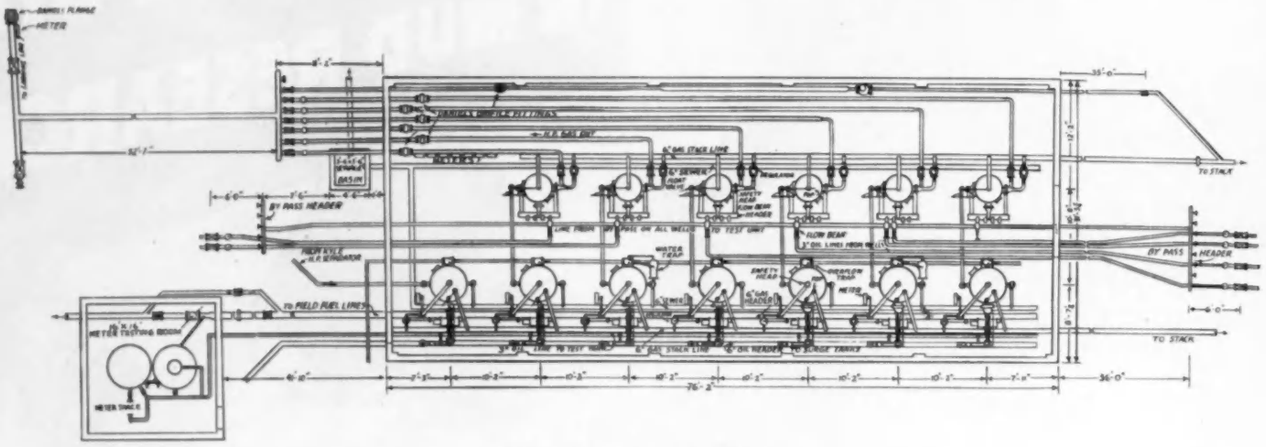
NATIONAL LEAD COMPANY

BAROID SALES OFFICES: HOUSTON • LOS ANGELES • TULSA

BAROID PRODUCTS: BAROID AND COLOX, AQUAGEL, FIBROTEX, BAROCO, STABILITE, AQUAGEL-CEMENT, SMENTOX, ZEOGEL, IMPERMEX, MICATEX, TESTING EQUIPMENT, BAROID WELL LOGGING SERVICE

teen wells have been completed on the structure, one having been carried to granite to disprove deeper possibilities. Nine wells are now productive from the first bench of the Sundance sand, while two are produced from the second bench of the pay, the Basal Sundance. An active water drive was instrumental in producing a swift migration of the light oil through the second bench, while gas expansion in the upper section is being controlled.

To November 1, 1941, Medicine Bow has produced 3,732,000 barrels of oil and 9,800,000,000 cubic feet of gas. With a single exception, all wells are flowing. Original formation pressure exceeded 2500 pounds per square inch, and although this has materially decreased throughout the 5 years of productivity to result in an areal irregularity of pressure distribution, the average is still well above 500 pounds per square inch. Gas/oil ratio is now about 200 cubic feet per barrel in Kyle 1 but varies in other wells as demanded. Some water is coming in, this ranging from 0 to 40 percent of produced volumes. Average daily production is 650 barrels.



Control Separator Plant

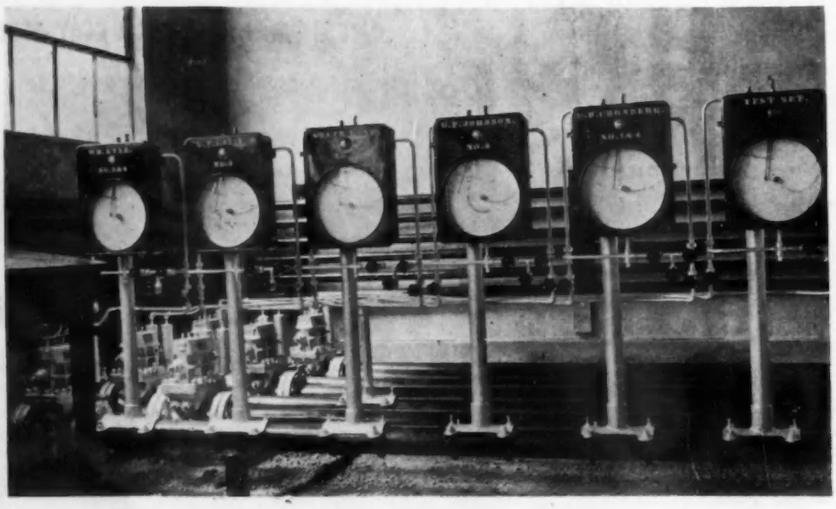
Stabilization of the oil has been necessary so that it can be handled in the conventional manner. Ethane, propane and butane ends are cut off in order to reduce the loss of pentane and other light ends. Under 38 pounds vapor pressure, the gravity has been checked between 60 and 75 degrees, corrected. This oil makes a fair fuel for a car, provided smoke is ignored.

Production From Two Zones

In most wells when initially completed, and in those wells operated as dual producers at this time, oil is obtained from both sections of the pay strata. The first section is the upper bench of the Sundance, 55-60 feet in thickness, producing distillate averaging 76 degrees API. The second bench, 60-110 feet in thickness, produces light crude of 60 degrees API and over.

To produce in this manner the operator has turned to the use of a 7-inch OD oil string set on top of the first bench of the sand; as at 5200 feet, with the hole being carried on through the section and into the second bench which might be topped at 5400 feet. A 5-3/16-inch liner is then set through the first pay, through the barren section intervening between the pay strata to a point near the top of the second bench. A packer between the two pay sections prevents migration from sand to sand, and diverts production from the second sand into the tubing, production from the upper into the casing. Some difficulty was experienced at first in satisfactorily packing off between the two pay strata, this being occasioned by pressure differentials between the strata which have exceeded 1400 pounds. However, after experience and study of the problem, and care in selection of a packer point, the practice proved itself.

Production control has obviated the use of lease storage, and separators, at the various wells. Oil is produced directly into 3-inch, high pressure, lead lines buried 5 feet as protection against freezing when temperatures drop to 25 and 30 degrees below zero. Production from all wells goes into the receiving house. It is here that pro-



Gas from the high-pressure scrubbers is measured through this bank of 500-pound, 100-inch orifice meters. Special orifice flanges, providing the facility of changing orifice plates under line pressure, are at left.

duction is beaned according to desired well volumes.

Control equipment is protected against freezing by steam-heated jackets. Tests have shown hydrates to begin forming at temperatures as high as 50 degrees at 400 pounds pressure. Consequently, and particularly in view of the low temperatures at times prevailing, extra caution has been taken to protect equipment at points of gas expansion or pressure drop. It is at such points that gas and water most readily combine to form "pipe line ice" or hydrates.

Separation and Metering

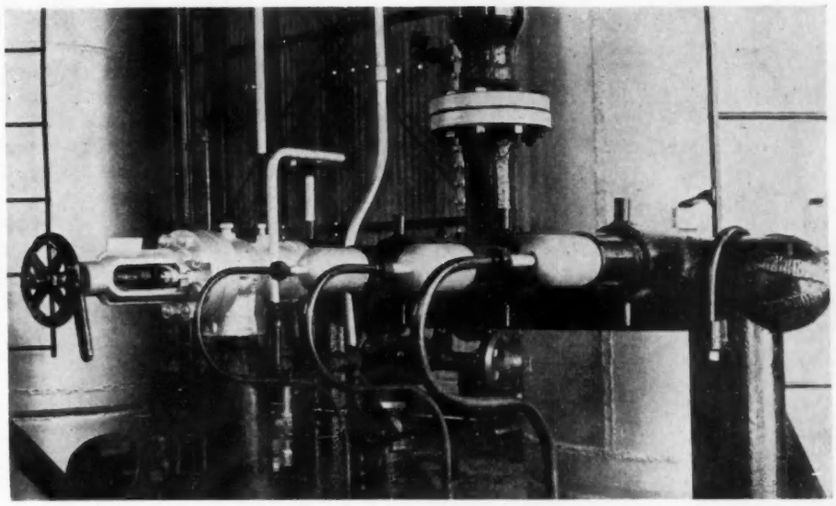
In the receiving house, separators are banked on each side of a cat-walk, high-pressure separators on one side, low on the other. Crude oil enters the house through headers at either end, is then beaned through a connection into individual, high-pressure separators. Oil output of the high pressures is regulated over to the low pressure side at 30-38 pounds. While the oil, being light, separates readily from water, two gravity flow traps are used on the low-pressure separators.

Oil discharges from the low-pressure separators through positive fluid meters, 24-hour differences in readings showing what volumes had been produced from each individual well. To assure accuracy in metering, the operator has constructed a meter testing room adjacent the separator house where meters are checked and a corrective factor, based upon dissolved and entrained gas, is obtained. This factor is applied to the gross readings to obtain the net volumes measured.

Gas from the high-pressure separators is the chief source of supply for a transmission system serving Laramie and other nearby towns. The output of each separator is measured through individual meter runs with flange taps actuating orifice meters recording on 100-inch, 500-pound charts. Orifice flanges are of the type making it possible for the operator to change orifices under pressure. The meters are banked for convenience.

Gas from the low-pressure separators is diverted into a field supply system with surplus being returned to the higher pressured lines. For the latter purpose the gas is put through a 165-horsepower, duplex compressor and is metered into the distribution system.

As the same difficulty with freezing could be expected in transmitting gas as in handling gas and production in the field, the operator has installed a dehydration plant. Glycol is used as a dehydration agent in a conventional manner. Equipment is sufficient to handle 10,000,000 cubic feet per day.



All wells are beaned in the receiving house.

Stabilization of Crude

Oil being metered out of the low-pressure separators through positive displacement meters is piped into two pressure surge tanks floating on the line between the receiving house and the stabilization plant. At this point analysis shows the oil to be characteristically as follows:

	First sand	Second sand
Methane and air	.02	.08
Ethane	.97	.89
Propane	.620	6.84
Iso-Butane	4.20	4.97
Normal Butane	8.29	9.55
Pentanes and Hexanes	80.32	77.67
Heptanes	100.00%	100.00%
Gravity, Pentanes and higher	57.0	58.6
Vapor pressure, Pentanes and higher	4.5	5.0

The oil is handled out of the surge tanks, which are converted shell stills with a capacity of about 200 barrels each, through three horizontal, steam-driven, charging pumps. The cold oil from the surge tanks (78 degrees) goes through a heat exchanger operating at 240 degrees and into the fractionating tower or stabilizing column 66 inches in diameter by 59 feet in height, operating at 200 pounds.

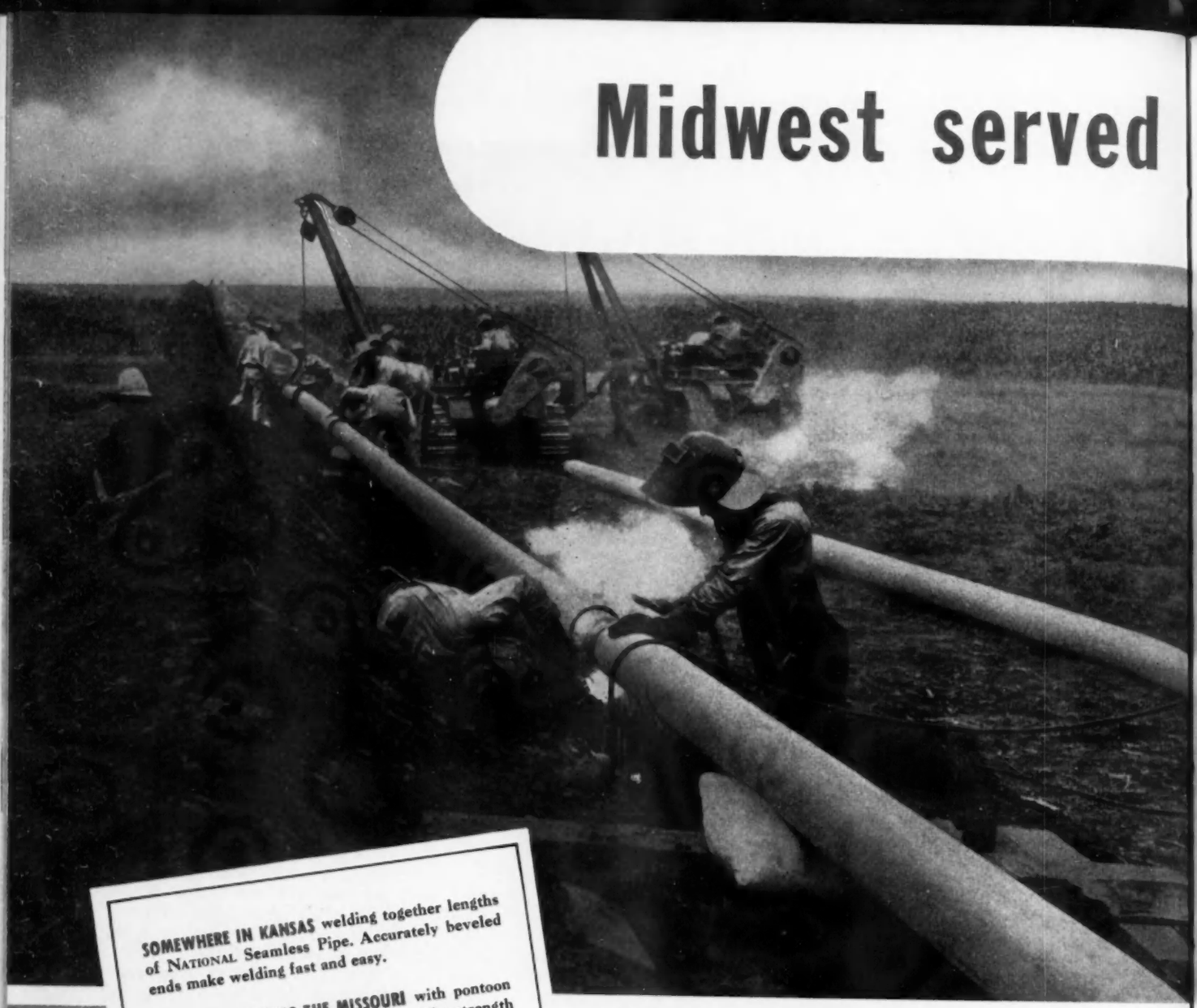
Light ends are taken off at the top of the tower, are condensed in water-cooled, reflux condensers, and the liquid propanes, butanes, etc., then go to the accumulator where entrained gas is bled off. Also, a return line carries reflux back to near the top of the column with two horizontal pumps handling the volume. Processed crude oil goes through a reboiler after leaving the stabilizer column, light ends carried through are cut back to the column, and the hot oil passes through the heat exchanger also carrying the raw oil to the top of the column. After passing through water-fed cooling coils, stabilized oil goes into field storage.

Propane and butane, and the other light ends condensed into the accumulator, are tanked under pressure at the plant. This product is dehydrated in a double-barreled calcium chloride scrubber.

While a plant of such completeness as that described is unusual in a field area, Medicine Bow is an unusual field with unusual problems. High pressures, high gravities, dual producing horizons, and the unstable nature of the oil made special demands of the engineers in charge. The plant has thoroughly proven itself during 5 years of operation. The investment has been returned and per-barrel stabilization costs have ranged from 1½ cents during periods of high production in the early life of the field, to a present operation-stabilization figure that is now about 4 cents per barrel.

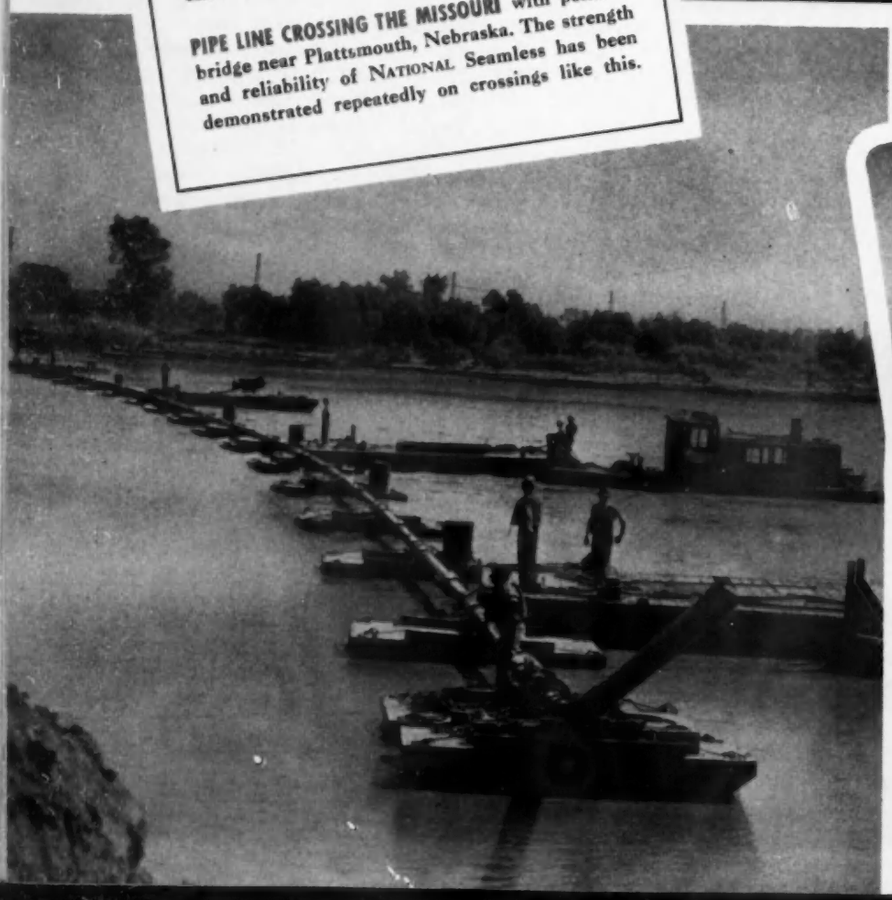
The unique manner of handling production, of beaning and of the use of a central receiving house for production has been of distinct advantage in operational control. Conservative methods, and the facts that the crude is unusually light, that a water drive is active in the lower sand, and that dissolved gas volumes were high, combine to indicate a high per-acre recovery on a basis of initial saturation.

Midwest served



SOMEWHERE IN KANSAS welding together lengths of NATIONAL Seamless Pipe. Accurately beveled ends make welding fast and easy.

PIPE LINE CROSSING THE MISSOURI with pontoon bridge near Plattsmouth, Nebraska. The strength and reliability of NATIONAL Seamless has been demonstrated repeatedly on crossings like this.



SMOOTH BENDS require good ductility and uniform wall strength. NATIONAL Seamless has both.

with another pipe line of

NATIONAL SEAMLESS

225 mile Globe line carries gasoline from McPherson, Kansas to Council Bluffs, Iowa

EVERY new seamless pipe line added to America's marvelous underground transportation system makes available a faster, more economical, and safer means of delivering petroleum products to another important distribution center. This new 6⅝" O. D. line of the Globe Oil and Refining Company furnishes a direct source of gasoline supply to one of the leading districts of the Missouri Valley.

NATIONAL Seamless was the natural choice here because of its outstanding record of reliable service in so many of the Nation's important pipe lines. Because it is pierced from solid billets of highest quality steel, it has no weld—no line of potential weakness. This assures pipe walls of uniform strength throughout, a factor of vital importance in pipe lines designed for high-speed, high-pressure performance.

Uniform wall strength, together with unusual ductility, makes possible strong, smooth bends made right on the job. Accurate beveled ends facilitate welding; clean, smooth surfaces assure more perfect coatings and wrappings. And, when a line of NATIONAL Seamless Pipe is once laid, it represents, by the highest engineering standards, the best-known safeguard against suddenly increased pressure stress, vibration, floods, or other emergency conditions. NATIONAL Seamless, "Walls Without Welds", is AMERICA'S PREFERRED LINE PIPE.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

United States Steel Export Company, New York

UNITED STATES STEEL

Walls without Welds

Alberta Basin Becomes Important Factor

By FRANK R. HENRY

THE Alberta Basin, a great marine sedimentary basin, lying principally in Alberta, with its southern tip extending into Montana, is attracting more attention than at any previous time. While this basin long has been regarded as one of the greatest oil reserves of the continent, its development has been slow.

However, during the past year, it passed the 100-million barrel mark in total yield, the Turner Valley field of Alberta accounting for 40 million barrels of this and Kevin-Sunburst, Cutbank and Pondera in Montana showing, between them, a total yield of some 68 million barrels. It attained a steady production of 46,000 barrels per day, 27,000 barrels coming from Turner Valley and 19,000 barrels coming from the three Montana fields.

All of this, together with the active interest being taken by the Dominion and Alberta governments to encourage and aid development as a war and foreign exchange measure, tend to focus the attention on this area.

Coincident with the "coming of age" of the Alberta Basin by its passing the 100-million-barrel mark, an interesting new strike or discovery has been announced on the Twin River structure in Southern Alberta. Twin River lies between Turner Valley and the Montana fields. It is believed that this new strike will usher in an extensive exploration and development campaign in the Southern Alberta plains area.

This discovery well, Cord 1, was drilled by Western Drilling Company, wholly owned by E. L. Cord, of Los Angeles. It is located in L.S.D. 16 of Section 3-2-23 W 4th and swabbed initially at the rate of 200 barrels per day after acidization on September 6, 1941. It was put on a steady production test on September 12 and made 100 barrels per day of clean 33-gravity oil on a 10-day test on the pump. The 3900-foot hole is being produced with a small pumping unit designed for a 1900-foot well, at present making between 70 and 100 barrels per day. It is planned to keep the well on production with this small pumping unit a short time, when it will be acidized again, and an adequate pumping unit installed if it fails to flow.

The well was drilled with rotary, 24 feet of Madison zone being taken between 3845 and 3869 feet. Core analysis showed this 24 feet of lime to have a porosity ranging between 10 and 25 percent, with good permeability. Since the old Roney-Nordon well on Twin River, in L.S.D. 11, Section 2-2-20w4, showed a gas pressure of 1250 pounds per inch, just above the oil zone, a flowing well was anticipated when the cores of Cord 1 were analyzed.

When allowed to stand, the fluid level comes to rest at 500 feet from the surface—which would indicate a larger well than heretofore demonstrated, when the well cleans up and is properly produced. It is hoped that the porous measures will clean themselves of spent acid and rotary mud and the production increase. However, regardless of any increase, the 100 barrels per day of production of this well is most interesting, and according to every reasonable assumption further drilling will result in larger wells, as rich spots in the lime are found and as completion and production problems are better understood.

No gas cap was encountered in this well. It is thought that certain factors, such as heavy, siliceous mud on the oil zone during drilling may have tended to hold back production. Some engineers are of the opinion that Twin Rivers wells should have the casing cemented on top of the lime with rotary, then the wells should be drilled in with cable tools; or, in any event, with a rotary mud containing a high percentage of carbonates so that acid could be used to dissolve the mud and clean the zone. This, because Twin River is located near the Hudson Bay Divide, having a surface elevation 800 feet higher than the Missouri river, the point of intake for the water or hydrostatic head of the Madison lime. This means that the column of rotary mud overpowered the oil zone by an excess pressure of 400 pounds to the inch during drilling. What appears to bear out this hypothesis is the fact that every commercial well ever completed in the Madison lime in the neighboring Pondera and Kevin-Sunburst fields of Montana was drilled in with cable tools.

The accompanying map and cross sections show complete regional control as well as details of structure and stratigraphy on Twin River and neighboring oil fields and structures.

Twin River, Del Bonita, Spring Coulee and Ross Lake, all detailed by core holes and reflection shooting, are steeply folded domes (although having the characteristics of essentially a bench and a plunge on steeply folded anticlinal folds). While lying between the Turner Valley field of Alberta and the Northern Montana fields, they are much more closely associated with the latter. These Alberta domes are down the flank of the geoanticline of which the Kevin-Sunburst field forms the crest and of which the Cutbank field forms a buttress sand.

The three Montana fields yielded, to July 31, 1941, 68,043,144 barrels of oil, divided as follows: Kevin-Sunburst, 38,784,661 barrels; Cutbank, 23,441,860 barrels; and Pondera, 5,816,623 barrels. Their present daily production totals 19,371 barrels, divided as follows: Kevin-Sunburst, 4841 barrels; Cutbank, 13,764 barrels; and Pondera, 766 barrels.

While Kevin-Sunburst and Cutbank are major fields, estimated to be capable of ultimate yields in excess of 100 million barrels each, they both have very unfavorable struc-

tural conditions. Each has thin zones and low pressures (12 feet of zone for Kevin and 17 feet for Cutbank, initial pressures approximately 550 pounds per inch for Kevin and 750 pounds for Cutbank). Both of these structures are very flat. All of this results in the accumulation being spread out over a large area, making for small wells and a low yield per acre.

The Alberta structures have much more favorable conditions. First, they are "basinward folds," being ideally located to receive uninterrupted drainage from the low of the Basin.

Second, they have steeper dips, more closure, and a higher ratio of drainage area to probably productive area. Deep drilling and reflection shooting show that the closure on the Alberta structures materially increases with depth.

Third, the Alberta structures have much thicker zones and higher rock pressures than the Montana fields. For example, a comparison of the Madison zones between the Montana fields and Alberta structures:

Kevin-Sunburst has 12 feet of "clean zone" (vertical extent of the oil saturated horizon) and had an initial rock pressure or gas pressure in the pay horizon of about 550 pounds per square inch. Pondera had 18 feet of clean zone and an initial pressure of about 550 pounds.

Twin River has 40 feet of clean zone and an initial pressure of 1250 pounds per square inch. Del Bonita has 95 feet of clean zone and 1700 pounds pressure. Spring Coulee has over 100 feet of clean zone and 2200 pounds pressure. Ross Lake should have 100 feet of clean zone and 2000 pounds pressure.

From the foregoing comparisons it is believed that the Alberta structures will have an equivalent production to that of the Montana structures concentrated in a much smaller area, which will make for large wells and a high yield per acre. Since Pondera had wells producing between 500 and 1000 barrels per day and Kevin-Sunburst has had wells as big as 5000 barrels per day, it is believed that all four of the Alberta structures will have large wells, in the Madison, as they are developed.

While none of the Southern Alberta structures has as yet produced from the sands of the Lower Blairmore (the producing horizons of Cutbank), two wells drilled on Spring Coulee structure showed these sands to be oil saturated.

Finally, the Devonian formations, known to underlie the Madison on these structures, afford deep zone possibilities.

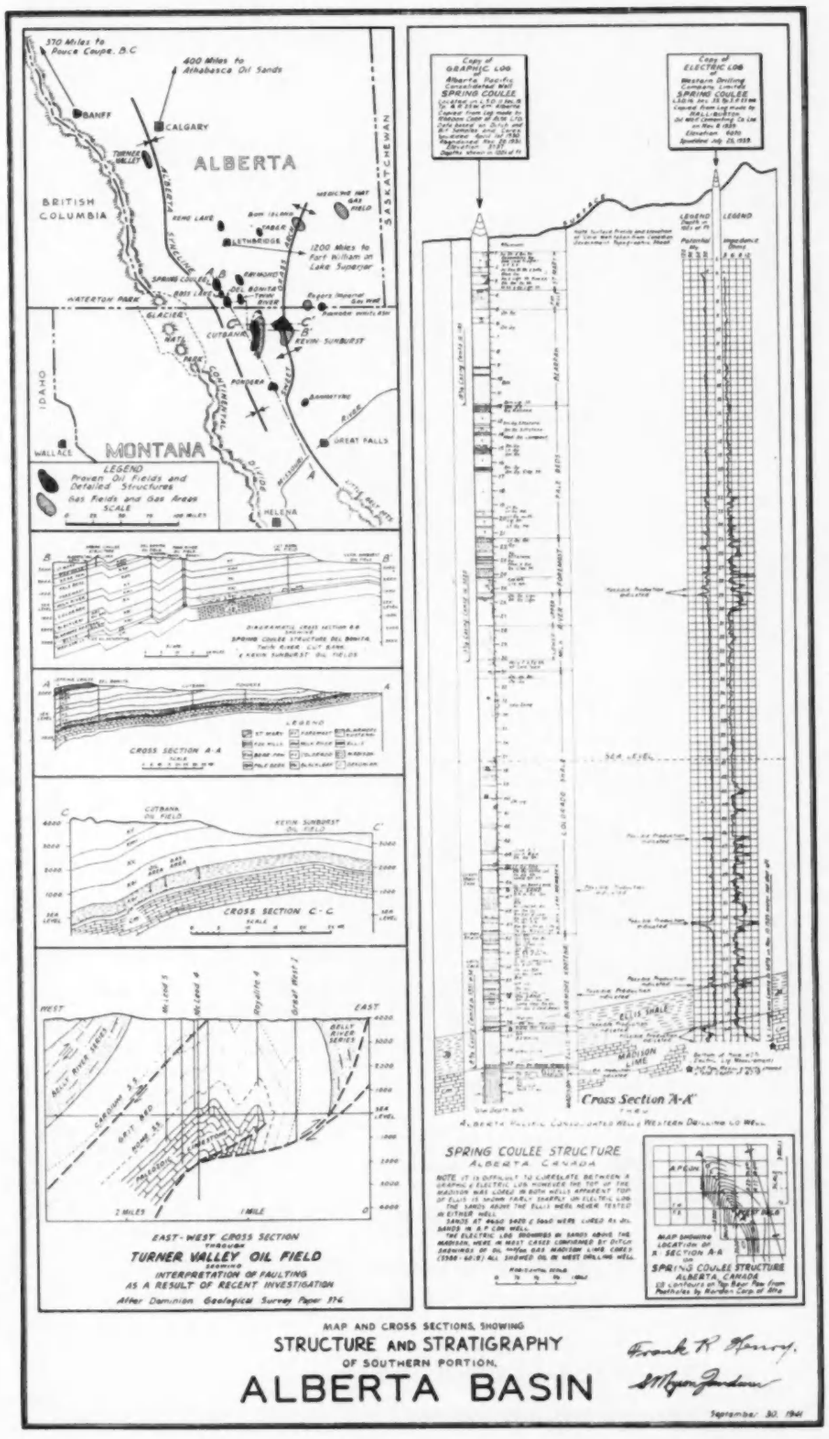
While Cord 1 on Twin River is the first commercial producer to be completed on any of the Alberta structures, several other wells (some not yet completed) have been drilled and demonstrate the producing zones and pressures as outlined above, and semi-prove the structures.

Western Drilling Company is drilling around 3000 feet on a well in L.S.D. 13, Section 18-1-21w4 on the Del Bonita structure. This is a joint test with Terminal Oil Company. Other interests are negotiating for further drilling on Spring Coulee.

The principal landholdings on the Alberta structures are as follows:

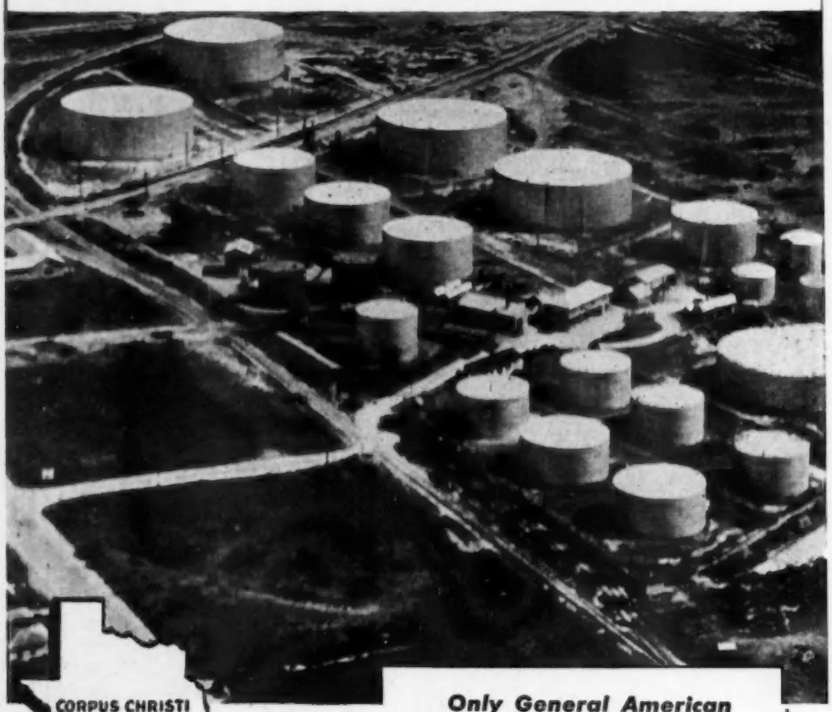
Twin River: E. L. Cord, Del Bonita Associated Oil Company, Nordon Corporation, and Wheatman Petroleum Ltd.

Del Bonita: E. L. Cord, Terminal



Corpus Christi eliminates the corpus delicti*

*Corpus delicti—the basic legal proof that a crime was committed; as in a murder, the actual body of the victim.



Waste in shipping bulk liquids leaves its own "corpus delicti" in the form of inventory losses, contamination, excessive insurance, and other profit leaks. Southwestern shippers can eliminate these crimes against prosperity—by using General American's mammoth Corpus Christi Terminal. In service, in privacy, it's **your** plant, without investment on your part. Check the seven exclusive General American benefits. You'll appreciate why we've had to **treble** our Corpus Christi capacity since 1936!

Only General American Gives All These Advantages:

1. **NO CONTAMINATION.** Separate pumps, lines, storage zones for dissimilar commodities.
2. **MODERN PROTECTION.** Latest safety appliances; lowest insurance rates, minimum evaporation losses.
3. **RELIABLE CUSTODIANSHIP.** Our warehouse receipts are highest type of collateral everywhere.
4. **INDEPENDENT OWNERSHIP.** Strictest privacy; we do not buy, sell or refine any commodities.
5. **NO WHARFAGE.** There is no wharfage charge at our own private docks.
6. **SPEED WITH SAFETY.** Day and night crews, complete facilities, eliminate all shipping delays.
7. **WORLD'S LARGEST TANK CAR FLEET.** One car or hundreds, wherever and whenever needed.

Strategically located to serve you!

GATX GENERAL AMERICAN

GENERAL AMERICAN TANK STORAGE TERMINALS

Goodhope, La. and Westwego, La., (Port of New Orleans)
Corpus Christi, Texas
Carteret, N. J. (Port of New York) Galena Park, Texas (Port of Houston)

A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Oil Company, Wheatman Petroleum Ltd., and Del Bonita Associated Oil Company.

Spring Coulee: E. L. Cord, Del Bonita Petroleum Ltd., Wheatman Petroleum Ltd., and Paragon Oils Ltd.

Ross Lake: E. L. Cord.

This new strike at Twin River brings into prominence the east flank of the Alberta Basin, an area of gentle Mid-Continent type folding, so-called the "plains area."

The west flank of the basin is a sharply folded, complexly faulted area, so-called the foothills area. Many wildcat wells located in this area have penetrated overthrust faults and have been abandoned in a formation younger than that in which they spudded. The startling exception to these casualties in the foothills area is the Turner Valley field. As shown by the cross section on the accompanying map, the overthrust fault passes under Turner Valley below the oil zone—hence in this case the structure, or the accumulation, was not destroyed by faulting.

Oil was discovered at Turner Valley in 1914—small wells in the Blairmore (Lower Cretaceous) sands.

Naphtha laden gas, with a gas-oil ratio of 35,000 feet to 1 barrel, was discovered in the Madison (Paleozoic - Mississippian) Limestone in 1924.

Forty-gravity oil, with a gas-oil ratio of 1000 feet to 1 barrel, was discovered in the Madison, down the west flank of the structure from the naphtha, in 1936.

While the 60-gravity naphtha tends to merge gradually into 40-gravity oil down the west flank of the structure, the line of demarcation between the two is, roughly, between the 1500- and 1700-foot contours below sea level; wells above this level yielding naphtha, and below yielding oil.

Turner Valley, up to July 31, 1941, has yielded slightly in excess of 40,000,000 barrels of oil and naphtha. Of this total yield, 9,318,820 barrels (over 90 percent of which was naphtha) was produced prior to 1936. Since January 1, 1936, 31,000,000 barrels have been produced. Turner Valley's present daily production is 26,800 barrels, from 162 wells.

The productive limits of the field are still undetermined, outpost wells both in the extreme northern and southern portions of the field having been recently completed for over 1000 barrels per day each.

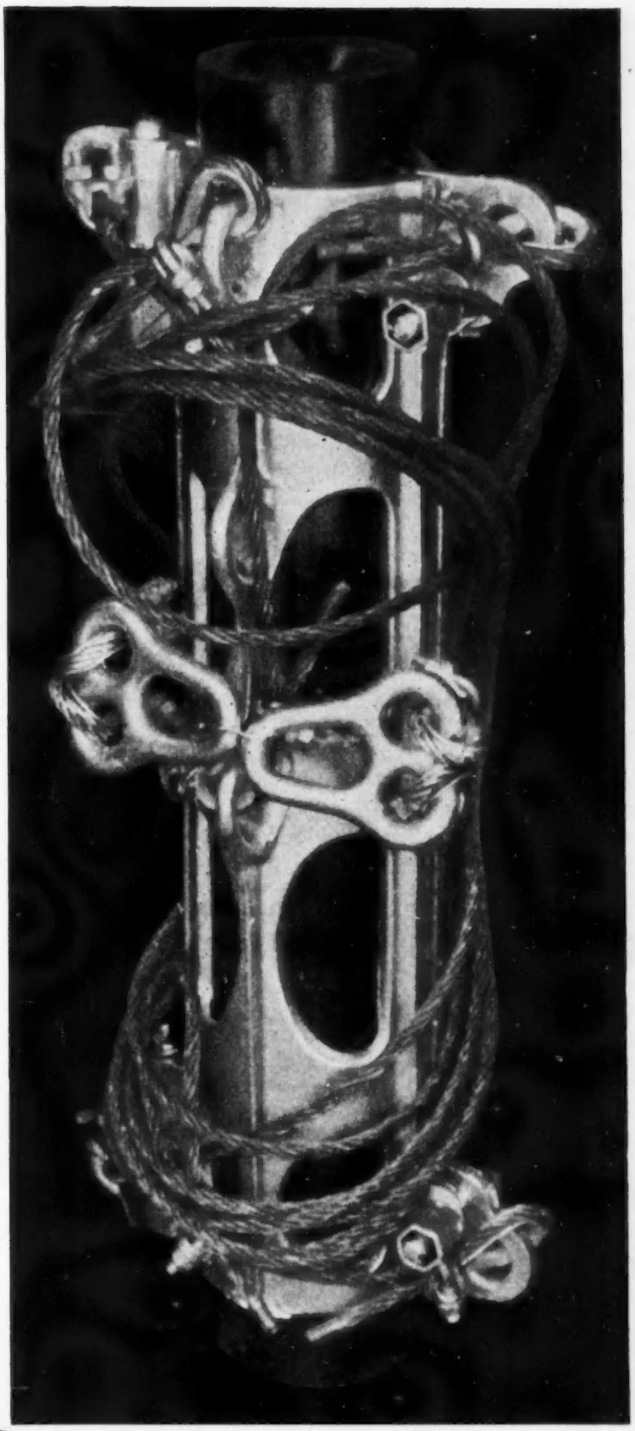
This wire line guide saves

$340

or more,

. . . reports Wire Rope Engineer.

A prominent Engineer for one of the largest wire rope companies says that in tests they have run, the Patterson-Ballagh Wire Line Guide has extended the life of the rope 20% and more in *every* test they have made. This means a saving of about $340.00 on the initial investment of less than $100.00 for the entire Guide, of which less than $40.00 is the part that finally wears out. He further advises that under ordinary use a line does not finish out one of the real deep wells, but the linings of the Wire Line Guide will last for a number of wells. If you want to save real money install these Guides in every rig.



ASSEMBLED, READY TO SHIP

PATTERSON-BALLAGH WIRE-LINE GUIDES

. . . . ***avoid whip in your line.***
. . . . ***drill at faster speed.***
. . . . ***perfect spooling at all times.***
. . . . ***spark-proof; no fire hazard.***

See Composite Catalog

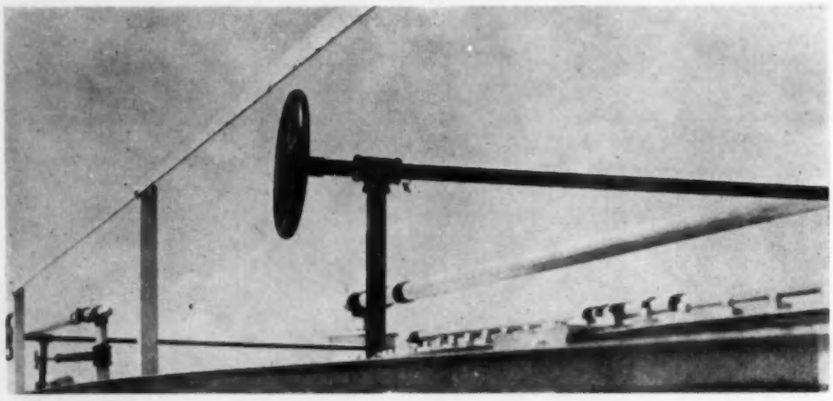
PATTERSON-BALLAGH
CORPORATION

Los Angeles Houston New York City

Practical Operating Hints for

1. SAFETY

Extensions on Flow Valves Cross Tanks to Afford Walkway Control and Protect Deck



Pipe and toggle joint carry drive for valve manipulation to hand wheel located at convenient height above tank walk and simplify control.

AN OPERATOR who places all inlet pipes and valves for fluid entering stock tanks on the side opposite the walkway, eliminates need for gaugers to walk upon the decks by erecting long valve stem extensions to bring wheels close to the walkway.

An 18-inch piece of 1¼-inch pipe is erected vertically in a socket at edge of the tank nearest to the walkway and is topped with a tee. Through the 1¼-inch tee is extended a section of 1-inch pipe of proper length to reach to the valve on opposite side of tank deck, and its end is fastened to the valve stem. On the end nearest and facing the walkway, a valve wheel is attached to the 1-inch pipe. The tee forms a loose-fitting socket which allows rotation of the 1-inch pipe by means of the wheel, such movements of the pipe turning the valve stem to open or close as desired. The 1¼-inch upright provides a firm base and holds the elongated valve stem securely in position.

By use of the apparatus, flow from gunbarrel or separator is switched into either tank as desired. Thus, the ever-present hazard of tank decks caving under a man's weight is removed, at the same time the strain from placing unnecessary weight on the tank decks is averted.

2. UNITIZING

Combination Mount Centralizes Controls

IN A repressuring set-up in the Loma Novia field one operator has combined a drip, meter run and meter setting into a compact unit. The gas is drawn from the high-pressure gas line and enters the unit through a nipple let into the top near one end. All water and drip collects in the drip as the gas flow is relatively retarded by the greater flow area of the unit.

A half-inch needle valve provides accurate regulation of gas quantity at the emergent end, it being passed through and measured in an orifice meter, mounted far enough down the run from the needle valve to avoid freezing at that point.

The meter is mounted on a short length of two-inch pipe, welded to the side of the drip chamber and extending high enough to simplify chart inspection and changing.—*Ty Davison, Wichita Falls, Texas.*

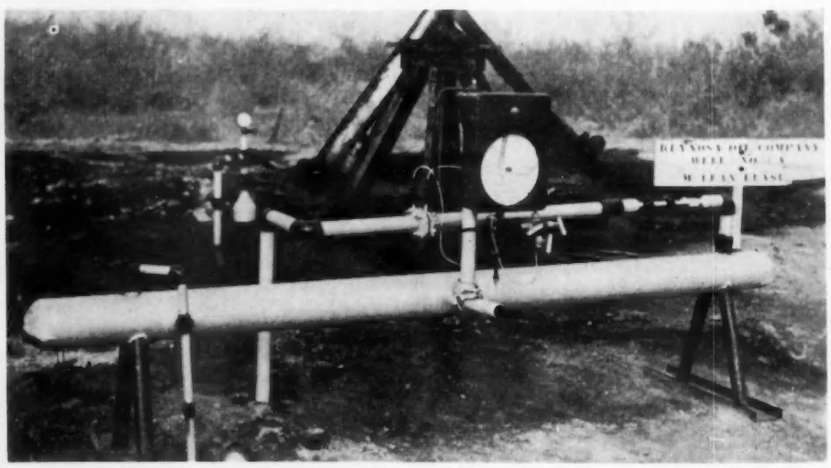
3. COMMUNICATIONS

Watertight Container Protects Run Tickets

ON LARGE leases where it is sometimes difficult for the lease switcher and the pipe line gauger to contact each other to transfer tickets after pipe line runs, one lease man devised a receptacle for depositing the tickets after the oil is received, to remain until collection at his convenience. A small glass jar, such as a common mustard jar, with a tin top which screws on, is used. It may be attached to any place convenient for the gauger and the lease switcher, and on this particular lease is attached to the flow line from the tached to separator flow line.

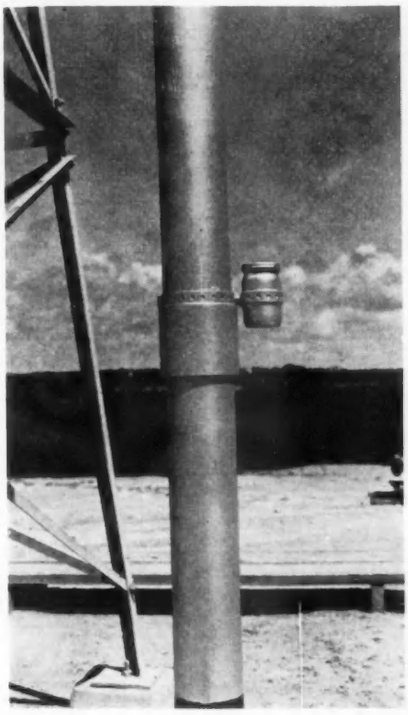
The jar and top are both painted aluminum to conform with color of the pipe to which they are attached, and the jar is fastened to the pipe by means of a perforated steel strap, bolted tightly to the support at shoulder-high level, and also painted aluminum.

After taking oil for the pipe line,



Drip, meter run and meter setting clustered on single mounting provide unitized hook-up and reduce space and maintenance requirements.

THE PRODUCTION MAN . . .



Attached to flow line, this holder affords ready access to tickets.

the gauger leaves the tickets inside the apparatus, replacing its lid to prevent loss or damage by the weather. At the switcher's convenience, he removes the tickets for the record and for their proper disposition. This procedure eliminates necessity of searching the large leases for the proper person and the loss of time involved, and also reduces possibility of losing run tickets in the event the man cannot be found at the time and the tickets stored away until a later date.

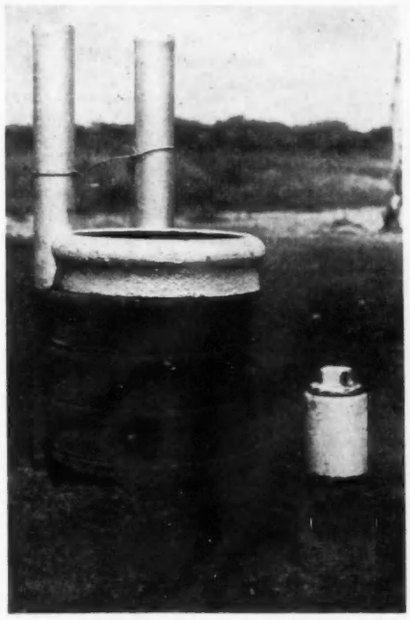
THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

4. SAFEGUARDS

Casing Protectors Form Valve Guard

TO ELIMINATE damage to a valve and to remove it as a hazard, one operator, having a flare line valve located at ground level, provides for mutual protection a steel housing made from several conductor-pipe thread protectors placed one above the other.

Shape of the protectors allows each to set firmly on top of the one below, and with five or six protectors placed in this manner, a barrel-like structure is the result, open at the top, and of sufficient diameter to allow regulating the valve from above without disturbing the structure. When necessary, the housing, or any desired portion of it, is easily removed.



Nested "big inch" protectors enclose exposed valve stem thoroughly.

The bottom protectors are painted black, with the top one aluminum which matches the color of the tank battery to enhance neatness of the lease and which at the same time makes the apparatus conspicuous to avert damage. As additional protection and to further attract attention of truck drivers and workers in vicinity of the tank battery, two upright posts of 2-inch pipe are driven into the ground alongside the housing, and painted the identical color, affording material protection in event a truck is accidentally backed into the apparatus.

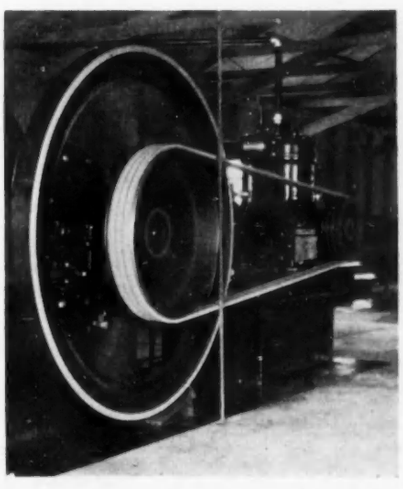
5. POWER

Compressor Driven By Power Unit

A SURPLUS of power in the gas engine driving a band-wheel unit was utilized to operate a small compressor in connection with a repressuring project on the property.

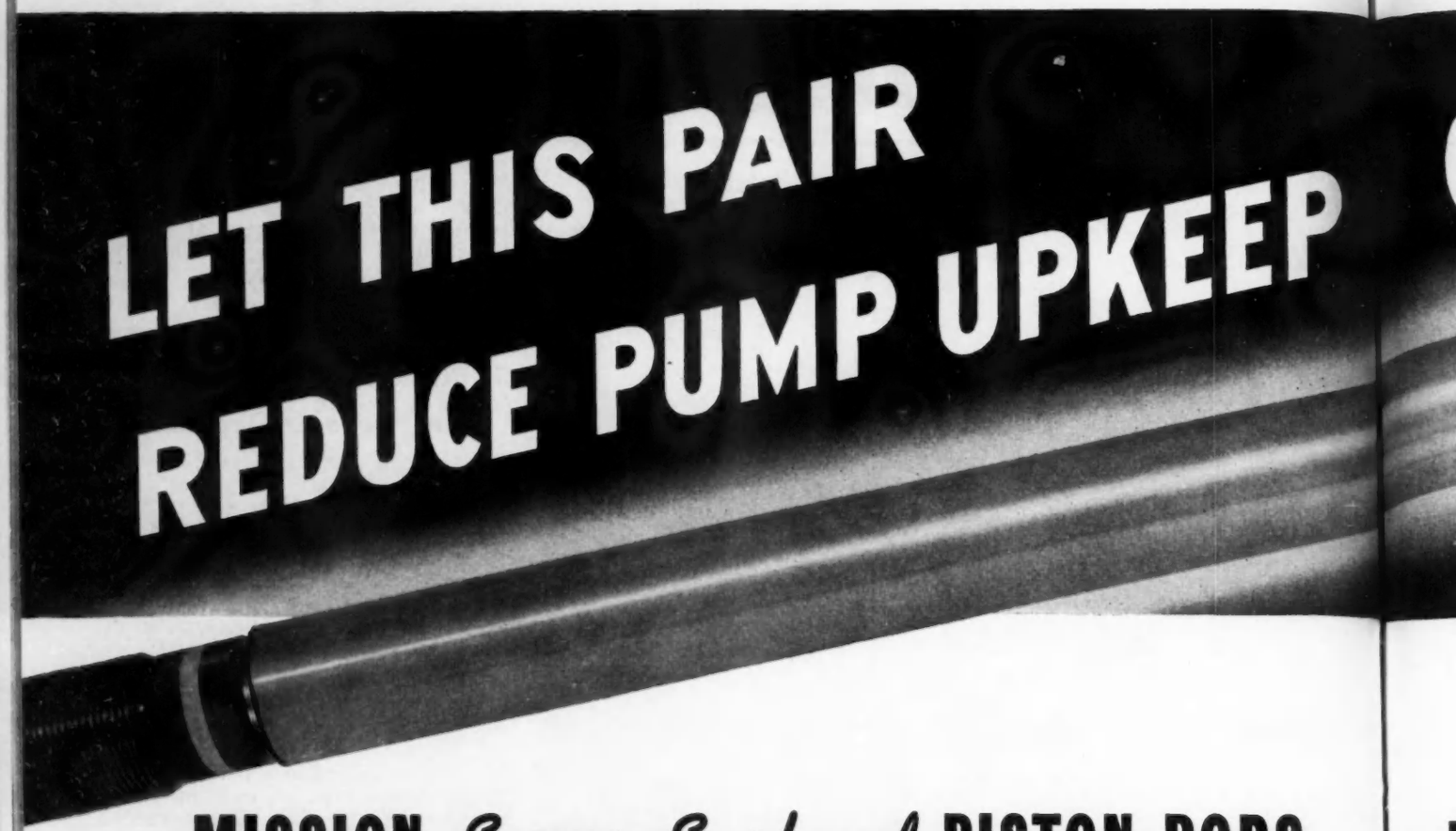
The compressor was set up in line with the flywheel across from the bandwheel pulley, and a Vee-belt drive improvised which used a special pulley made from a built-up Vee-section welded to a flat disc of 3/8-inch sheet iron, in turn bolted to the flywheel spokes through the usual pulley bolt holes.

Oil is kept from being thrown off the flywheel and possibly affecting the life or service of the Vee-belts through a wiper mounted on the station floor below the rim. The wiper is made from a short run of one-by-four stock with a wedging block at one end, to which is tacked a short piece of canvas belting. The wiper is slid along the floor until it reaches a point where the projecting edge of the wiper contacts the flywheel rim, and keeps it clear of oil and dirt.—*Ty Davison, Wichita Falls, Texas.*



Flanged disk on engine flywheel is grooved for V-belt drive.

LET THIS PAIR REDUCE PUMP UPKEEP



MISSION *Super-Surfaced* PISTON RODS

These rods cost you less in the long run because they last longer . . . they last twice as long as File Hard Rods under ordinary conditions and three to four times longer under corrosive conditions. Yet they cost only about 45% more. This means lower rod costs any way you figure it.

Here's Why They Last Longer:

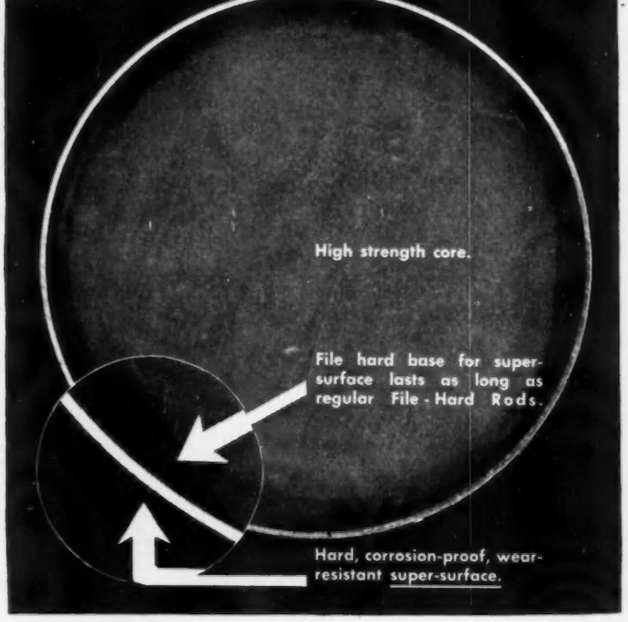
The super-surface is corrosion proof. Ordinary rods pit badly under corrosive conditions. This pitting, and the grooving that results, quickly becomes so bad that the rods must be discarded. Mission Super-Surfaced Rods, however, stay smooth because of the corrosion-proof super-surface coating. This is why these rods wear three to four times longer than File Hard Rods under corrosive conditions.

The super-surface is extremely hard . . . so hard that the rate of wear is much slower than that of a File Hard Rod.

They offer two wearing surfaces. After the super-surface coating is worn off, a regular File Hard Rod remains for another long period of wear.

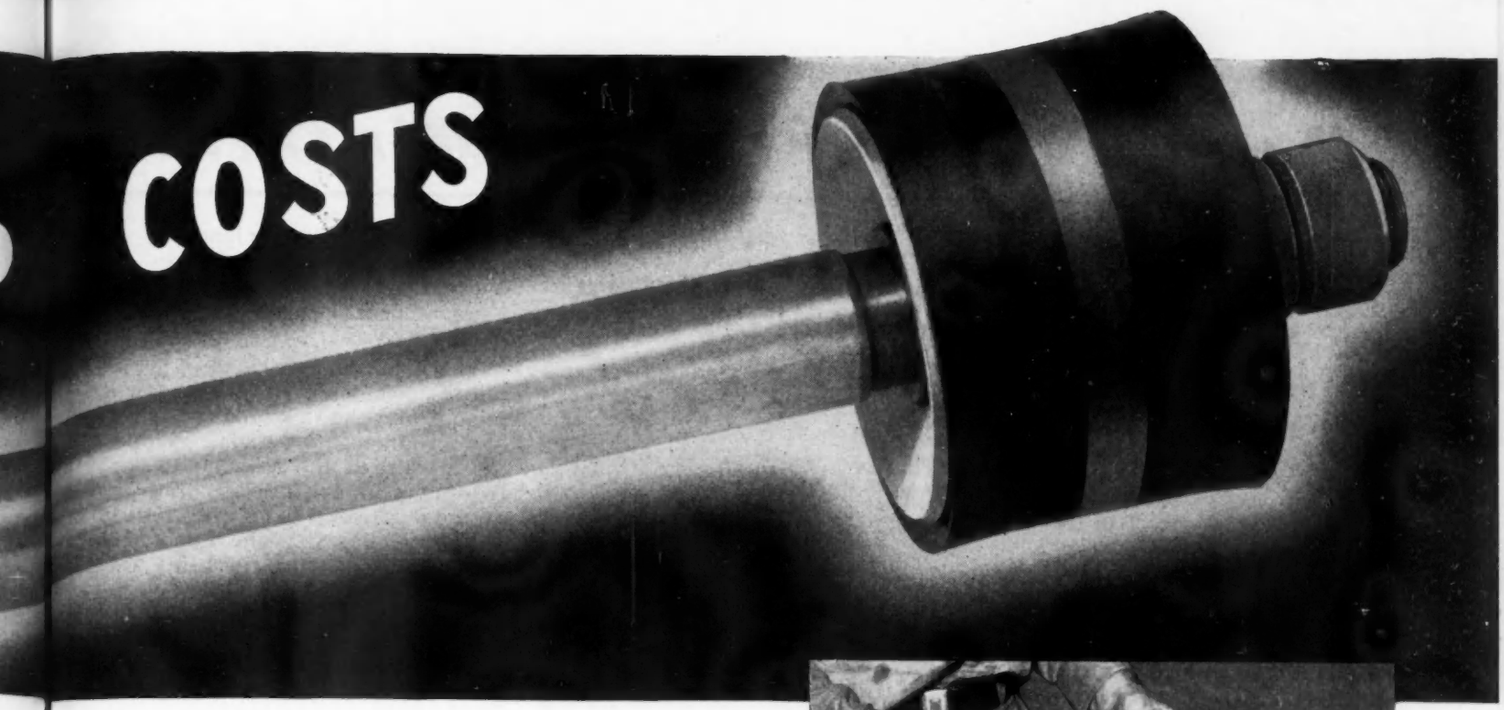
GUARANTEE

The famous Mission Piston Rod Guarantee protects you from damage to your pumps caused by rod breakage when the Rods are equipped with Mission Pistons of the **proper taper** and Mission Self-Sealing Gland Packing.


High strength core.
File hard base for super-surface lasts as long as regular File-Hard Rods.
Hard, corrosion-proof, wear-resistant super-surface.

Actual photograph of an etched cross section of a Mission Super-Surfaced Piston Rod.

Thousands of operators have found by actual tests that Mission Super-Surfaced Piston Rods cost far less in the long run. Try them in your pumps. Keep cost records and see how much less they cost you. For minimum rod and packing wear, be sure to use Mission Self-Sealing Gland Packings with these rods.



MISSION FLUID END PISTONS

Mission Replaceable Piston Rubbers mean low replacement costs. You don't have to pay for a complete new piston every time rubbers wear out. Simply install new rubbers on the old piston body and you are ready for another long run.

You get a double saving with Mission Pistons. In addition to saving the cost of a new piston body when rubbers are changed, you save because these tough rubbers stay in your pump longer without trouble.

GUARANTEE

Test Mission Pistons in your pumps. If they do not prove to be more economical than the pistons you are now using the full purchase price will be promptly refunded.

Complete information, including prices on Mission Pistons are found in your 1941 Composite Catalog. These pistons, along with other Mission Products are at your favorite Supply Store. **Mission Manufacturing Company, Houston, Texas. Export Office: 30 Rockefeller Plaza, New York.**

MISSION

SLUSH PUMP PARTS

Your pumps stay running longer and cost less to repair when equipped with Mission Pump Parts

1. When old rubbers are worn, don't throw away the piston, remove the old rubbers and save the piston.

2. It's not even necessary to remove the piston body from the rod. You save on shut down time when rubbers are changed.

3. New rubbers are installed and the piston is ready for another long run at about half the cost of a new piston.

Practical Operating Hints for

1. MUD HANDLING

Expanding Trough Absorbs Mud Return Pulsations Permitting Equalized Flow

Elongated section of ditch between end of "big inch" pipe serving to handle mud returns and shaker diversion plates is unitized and portable.

TURBULENCE and velocity of the mud stream as it strikes the screen often result in travel across the mesh which is too rapid to permit the thorough separation of cuttings and sand from the drilling fluid. As a result, the returns circulated carry abrasive materials which unnecessarily shorten the life of slush pumps, hose and drill pipe.

To permit the mud to reach the screen in a smooth, unbroken flow, one contractor ends the mud return pipe some 10 feet from the screen, permitting it to empty into a trough which increases gradually from a little more than pipe size to the full width of the screen at the outflow end. By varying the inclination of this trough, flow is maintained just rapidly enough to prevent settling out of cuttings, and is slowed sufficiently to dampen out any waves or heads which may be in the stream as it emerges from the end of the "big inch" serving as mud flume.

Adding dilution water just before the wide slowly moving stream of mud enters the screen prevents the water from washing out and causing cuttings to settle, and aids in releasing them in the passage of the fluid over the vibrating screen.

2. MANIFOLDING

Welded Drill Pipe Unit Reduces Mud Loss

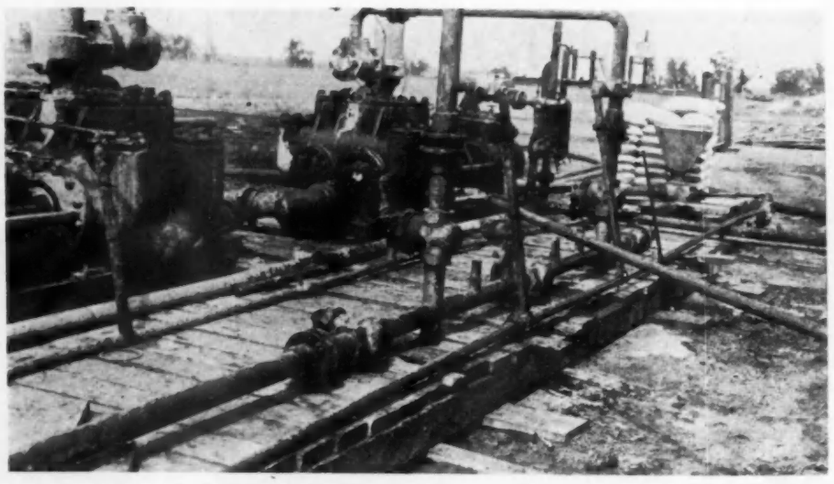
A UNITIZED mud manifold, welded from drill pipe and equipped with equally spaced flanged unions and individual quarter-turn valves for blocking off the individual pumps, serves to speed up mud deliveries, and to eliminate many leaks and washouts.

The manifold is welded in three units, one for each of the two pumps, and the third for tying the pump leads together and delivering the stream to the standpipe. The two pump units are made to bring the two streams over a common line perpendicular to the pump setup, each terminating in half of a flange union. The third section consists of a lateral, provided with plug valves at both ends, and with risers spaced to a predetermined dimension to accord with the operating distance between the mud pump discharges. These risers also terminate in halves of flange unions, all joints save those of the valves being welded to reduce the number of threaded connections.

With the manifold open at either end through the valve there, mud delivery may be made in either direction, or the system drained or flushed through the open valve when required.

Short blind stubs welded to the manifold below the point of entry of each mud stream provide support at this point and prevent vibration which might otherwise cause leakage or crystallization and breakage.

Separation of the manifold into readily portable lengths by means of the unions makes the sections more easily handled on the move and aids in rigging up.

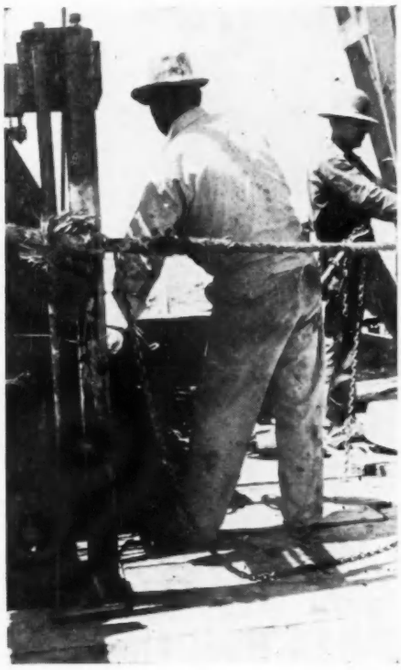


Manifold built up from welded drill pipe with integral quarter-turn valves and sectionalizing unions simplified mud pump hook-up.

THE DRILLING RIG . . .

3. ROPE CARE

Spinning Line Wear Cut by Post Move



Repeated striking of splice against guard roller accelerates breakdown.

WHEN a forked line is used for spinning and operating the tongs, it frequently happens that the splice or toggle junction is so located that it strikes the guard roller before the tong arc is completed or the full length of spinning line pulled through.

By shortening on the line to the tongs or carrying the splice a foot farther out along the line, it is possible to avoid this contact, which is the cause of heavy jarring impacts on the equipment, and which subjects the line to a severe strain which does not contribute toward making up the drill pipe.

If the length of spinning line or chain is such that the splice cannot be moved away from the cathead, it is sometimes possible to shift the stand of the guard roller by reversing or shortening its supporting brackets, and thus afford slightly longer travel of the splice or swivel before contact is made.

Where no change in the set-up on the derrick floor is permissible, good practice demands that the tongs be swung through their arc for one more "bite" on the pipe before the final pull to insure tool joint seal.

4. CONTROLS

Extension Facilitates Steam Handling

TYING in the steam line to the slush pumps at a point near the derrick permits floor control of steam to the pumps, and saves time in making desired changes in mud flow rate.

One drilling contractor replaces the usual valve wheel with a universal joint, extending the valve stem to the derrick floor, where the end of the extension protrudes through a hole in the work-bench. The end of the extension is given a double offset, forming a crank which affords ample leverage for valve control.

Extending through work bench, this crank handle controls mud pump steam.

For moving, or if the entire bench must be available for special work, the extension is simply unshipped form the universal joint, and backed out of the wooden "bearing" in the bench planking.

5. OIL HANDLING

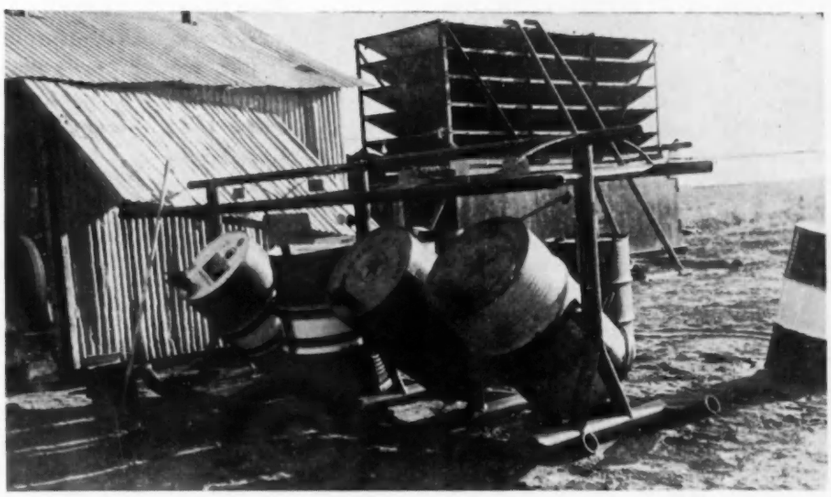
Frame and Tarpaulin Protect Oil Drums

THE usual skid-mounted oil-drum rack, in which individual drums are carried in swivelled frames to permit drawing off small amounts of oil, has been improved by Clay Drilling Company at its operations in Hockley County, Texas.

The usual end posts carry cross arms, set into the posts a short distance below the top, all three terminating in longitudinal lengths of 1½-inch pipe, which are connected by a number of curved strips of steel.

This frame work serves to carry a small section of tarpaulin, and thus provides an all-weather top over the drums which effectively prevents the fouling of the contents of the drums by rain water collecting within the recessed top and entering the drum through the filler (or breather) plug.

On the move the tarpaulin is removed and rolled or folded, to prevent damage through contact with other equipment when on the truck or being winched into place.



Overhead frame work on usual oil drum rack supports provides for using tarpaulin to protect open drum ends during rainy weather.

FOR AMERICA'S DEFENSE

And More Efficient Power FOR THE PETROLEUM INDUSTRY

Two well hook-up in Robbins Pool, Kansas, operated by Utility Electric Power. Depth of wells, 3,115 feet.

To our way of thinking, that which is defense for the Petroleum Industry is also defense for America and its people. Not defense against the threat of actual warfare alone, but defense against inefficiency and unprofitable operating costs. And defense in this sense is none other than Utility Electric Power. For with it you have the most modern and efficient type of power available to pump the shallowest or deepest well; to operate the biggest pipe line station; to operate the largest refinery; or to drill the deepest well. In fact, Utility Electric Power is your No. 1 defense weapon against outmoded power methods and practices, because it offers advantages not available with any other type of power. We have the facts to prove it. All we ask is the opportunity to show them to you. Why not ask us to help solve your power problems—now!

PROFIT! BY USING Utility ELECTRIC POWER

The Petroleum Electric Power Association is the outgrowth of a desire on the part of Electric Power Companies to render greater service, through cooperative effort, to the Petroleum Industry.

CONSULT YOUR ELECTRIC POWER COMPANY

● When planning for power for PIPELINE STATIONS . . . Pumping . . . Refining . . . or Drilling purposes . . . why not call in your Electric Power Service Company's Sales Engineer. He can give you invaluable assistance, and may save you thousands of dollars by helping you get the right power set-up for your specific job.

Use Utility Electric Power!

PETROLEUM ELECTRIC POWER ASSOCIATION

Box 1498, Oklahoma City, Oklahoma

HIGHLIGHTS IN THE WEEK'S NEWS

Allowables

Bureau Anticipates Record Demand Will Continue

Estimating that a daily average production of 4,070,000 barrels of crude oil would be required to meet November demand, the United States Bureau of Mines on October 21 predicted that the current "unexpectedly high" level of demand will be maintained through the coming winter, with production running to new all-time record figures.

The estimated November output, the bureau said, will be 57,100 barrels a day above the estimate for October and 13 percent above actual demand in November, 1940.

Average daily production during the 4 weeks ended October 4 was 4,007,000 barrels, and runs to stills 4,000,000 barrels, while domestic stocks declined an average of 71,000 barrels daily, indicating a demand for domestic crude of 4,078,000 barrels a day, it was pointed out.

"The current demand for all oils remains at an unexpectedly high level above last year and this trend may be expected to continue during the winter 1941-42," the bureau commented.

"While increased taxes and curtailment of normal business, as the defense program expands, may progressively reduce the relative increase in demand during the last three quarters of 1942, the present emergency seems to indicate maintenance of current operations rather than the usual seasonal decline in either production or runs to stills.

"The prospects of improved transport facilities to the East Coast and of increasing export and naval requirements indicate the continuance of peak operations in all the refinery districts from the Gulf to the East Coast. Hence the bureau's forecast for the winter season now indicates runs to stills of over 4,000,000 barrels daily and a probable demand for domestic crude petroleum of at least 4,050,000 barrels daily.

"The effects of a larger production of crude oil in Illinois, Mississippi and Michigan, and a substantial increase in the market demand for Texas oil are reflected in the forecast and should result in reducing the long-continued draft on crude storage."

Estimated Daily Average Crude-oil Demand in November

State	Barrels
Texas	1,454,700
California	626,700
Oklahoma	469,400
Illinois	408,100
Louisiana	333,200
Kansas	253,500
New Mexico	115,200
Wyoming	83,400
Arkansas	76,500
Mississippi	55,100
Michigan	47,400
Pennsylvania	45,500
Montana	20,600
Indiana	20,500
New York	14,500
Kentucky	14,300
West Virginia	11,000
Ohio	9,000
Nebraska	6,200
Colorado	5,200
	4,070,000

The forecast placed the domestic demand for motor fuel in November at 55,500,000 barrels, an increase of 13 percent over the November, 1940, actual demand, which, it was pointed out, was relatively low.

Exports of motor fuel are placed at 2,500,000 barrels, exclusive of re-exports of fuel imported in bond.

An increase in stocks of 1,400,000 barrels was called for, it being pointed out that stocks of finished and unfinished gasoline on August 31 were 80,377,000 barrels, while American Petroleum Institute figures indicate a decline of about 800,000 barrels in September, which would leave approximately 79,600,000 barrels in storage at the close of that month, or about 2,300,000 barrels less than the stocks on September 30, 1940.

With benzol production and direct sales of natural gasoline estimated at 1,650,000 barrels, indicated refinery production for November will be 57,750,000 barrels, allocated among the several refining districts by the bureau, as follows:

East Coast, 7,060,000 barrels; Appalachian, 2,210,000 barrels; Indiana-Illinois, 12,210,000 barrels; Oklahoma, 3,100,000 barrels; Kansas-Missouri, 3,310,000 barrels; Inland Texas, 3,840,000 barrels; Texas Gulf Coast, 14,320,000 barrels; Louisiana Gulf Coast, 1,930,000 barrels; Inland Louisiana - Arkansas, 1,160,000 barrels; Rocky Mountain, 1,560,000 barrels; California, 7,050,000 barrels.

Estimating natural gasoline to be blended at refineries as 8.4 percent of the total refinery production, or 4,850,000 barrels, the bureau figured the yield of straight-run and cracked gasoline as 43.9 percent which, applied to the production of 52,900,000 barrels, gives crude runs of 120,500,000 barrels, or 4,017,000 barrels daily.

The estimate for foreign crude runs to stills is 4,100,000 barrels; exports are placed at 3,500,000 barrels, compared with an actual of 3,805,000 barrels a year ago; and crude to be used as fuel and losses is placed at 2,200,000 barrels, giving a total demand for domestic crude of 122,100,000 barrels or 4,070,000 barrels a day, allocated among the producing states as shown in the accompanying table.

News Index

General:
- Allowables 51
- Associations 55-57
- Prices 61
- Washington 10

Markets-Statistics 60

Men in News 75

U. S. Field Operations:
- Arkansas 66
- California 66
- Completions 68
- East Texas 64
- Illinois 63
- Kansas 63
- Louisiana Coast 66
- Michigan 67
- Mississippi 66
- New Mexico 66
- North Louisiana 66
- North Texas 63
- Oklahoma 63
- Rocky Mountain 67
- Southwest Texas 64
- Texas Gulf Coast 66
- West Texas 64
- Wildcat Development 73

Texas Allowable for November 1,479,618 Barrels Daily

The Texas November proration order provides for a net production of 1,479,618 barrels daily; 24,918 barrels higher than demand estimated by the United States Bureau of Mines.

The order provides that fields shall be shut down 8 days in November, as compared with 9 in October. The shut down days are November 2, 8, 9, 11, 16, 23, 27 and 30.

The Texas Railroad Commission made changes in only two field allowables. Old Ocean was reduced from 22,741 to 20,286 barrels because of high gas-oil ratios. Conoco - Driscoll was reduced from 3944 to 3645 barrels, which, after shut down deductions are made, will result in an allowable equivalent to that provided in the court order governing the allowable for this field.

All three members of the commission approved the new order. Commissioner Ernest O. Thompson pointed out that it was exactly in line with his desires to see Texas production increased.

"If the Bureau of Mines estimate is correct," Thompson said, "then about 24,000 barrels will go to storage. Thus the current demand for oil will be fulfilled, and in addition, there will be some increase in the amount of oil building up in stocks."

Statewide Hearing

How to supply oil in proper quantities for national defense was the principal issue raised at the statewide proration hearing held in Austin last week. Commissioner Thompson, on furlough from the Army, raised the question as the hearing was convened.

In a statement he pointed out that the industry was one of the most important from the standpoint of defense and that it was absolutely essential that as much oil be produced as could be produced without waste. Stocks, he reminded the gathering, have been reduced 19,000,000 barrels—reduced to a point which does not assure safety.

"To hold down production in the hope of creating a false scarcity in order to raise the price would be unworthy of any American," Thompson said. "Texas storage is almost empty, and now is the time to fill it and allay fears concerning an alleged scarcity. This is the season to build up stocks for the spring runs.

"I hope that the oil industry will ask the commission to produce all that can be produced without waste. This is the sort of thing that will hearten our allies and strike fear into the hearts of our enemies. The transportation facilities will be forthcoming I am sure."

Commissioners Sadler and Culberson obviously disagreed with Thompson, as their questions to witnesses indicated.

Box 1498, Oklahoma City, Oklahoma

Coordinator's Office Issues Detailed Instructions on Getting Priorities

DETAILED instructions for the guidance of the industry in obtaining preference ratings on materials required for operation, maintenance and repair, as well as for new and additional equipment, have been drawn up by the production division of OPC.

Especially important, it was emphasized, is the careful preparation of forms if preference ratings are to be obtained with a minimum of delay. Particularly conducive to delay, officials said, is the practice of substituting supplemental lists of needed materials instead of itemizing such materials on the form provided, because of the additional work involved and the heavy volume of applications which must receive attention by the coordinator's office being submitted to the Office of Production Management.

The preference ratings will be granted to both producers and refiners and service companies, such as electrical logging, cementing, geophysical, etc., are considered a vital part of the industry and are regarded as operators for the purpose of securing priority assistance.

The priority ratings will be granted not only for mainteance and repair work but for development, such as a drilling program or the construction of a gasoline plant, cycling plant, repressuring plant, pipe line or other facility.

The instructions drawn up by OPC are designed to give full information regarding the manner in which applications should be made, and include outlines on how to obtain ratings for new and additional equipment; for repairs, maintenance and operating supplies, the use of the OPM priority application form, how to make application for a drilling program or other project, and how to obtain material in case of emergency.

The text of the instructions together with a sample form, follows:

Priority for Necessary Scarce Materials for the Petroleum Industry

All the available resources of the Nation are being directed toward Defense. More and more planes, warships, tanks, and guns are being built each day. In order to keep them in operation it is necessary to produce oil and more oil.

The increasing demand for oil is placing an ever-growing burden on the petroleum industry. Each barrel of oil is important to National Defense. There must be not letup in the search for new reserves, and every effort should be exerted to extract the known reserves with increasing efficiency.

The demands for essential materials by the Army and Navy have been so great that a scarcity has developed in the amount of steel, copper, nickel, rubber, and many other materials ordinarily available for the Petroleum Industry. This means that more oil must be produced with an expenditure of less material.

The Office of Petroleum Coordinator has been established to be of service to the industry in every way possible to attain the objective which now is presented to it, viz., to produce more oil to meet the daily demands of Defense and Civilian needs. The Office of Petroleum Coordinator and the Office of Production Management are willing and anxious to help each Operator and Supplier obtain the materials which are necessary to assure an adequate supply of petroleum and petroleum products.

It should be added that Service Companies such as electrical logging, cementing, geophysical, etc., are a vital part of the Petroleum Industry and are regarded as Operators for the purpose of securing priority assistance.

How to Obtain Preference Rating for New or Additional Equipment

A producer may need casing for a well to be drilled; he may require new tanks and separators for additional wells; he may need a pump to maintain the production on a well that has ceased to flow. A refinery may need a new compressor or a pipe line may need a new pumping unit. The Supplier in turn will need these materials for distribution to the Operator. In all such cases, a priority rating may be obtained by completing a PD-1 form which should be transmitted to the Office of Petroleum Coordinator.

Most current needs can be satisfied through the use of the PD-1 form, and all persons connected with the Petroleum Industry should become well acquainted with this form as soon as possible.

A great deal of care has been given by the Office of Production Management to the drafting of the PD-1 form. When it is properly made out it will accurately present the urgency of the applicant's needs. This will permit the Office of Petroleum Coordinator to recommend to the Office of Production Management a rating that will meet the requirements of the case as indicated. It is so important that the PD-1 form be properly completed that a number of the vital points are specifically called to the attention of the applicant:

1. A description of the material should be given similar to the description on a purchase order, i.e., the generally understood and acceptable description ordinarily used in the trade.

2. Be sure to state cost of material.

3. Delivery dates must be shown so that the needed material will be supplied when it is to be used and not before.

4. The name of only one Supplier should be shown. The name of the producer or manufacturer of the material can be given as the Supplier if the name of the supply house, through which the material is to be delivered, is added. The order number should be the supply house's order number and not the purchaser-user's order number.

5. State how material is to be used. If information can be shown by plat, it would be advisable to do so. When the material is to be used in a well or wells, furnish plat of location and enough of surrounding area to show spacing pattern. Plat should indicate, with appropriate symbols, all wells on the lease or leases in question, and also on the offsetting leases. The well symbols used should identify specifically: (a) Locations. (b) Drilling wells, and (c) Producing wells.

6. State specifically how the use of the material is essential to National Defense. A general statement such as, "Petroleum is essential to National Defense," is unsatisfactory. Show what results are actually expected from the use of the necessary scarce material.

7. The inventory of the requested material must be shown. This inventory must include all the material owned by the parent company or any of its subsidiaries, and all material on which the company has any right or option to claim ownership. Under this heading must be included all the requested material which can be regarded as being owned by the company no matter where it may be located.

8. Notarize four copies and mail them to the Office of Petroleum Coordinator. The fifth copy is to be retained for your files.

9. Announcement was made on October 1 by the Director of Priorities of the Office of Production Management that those who use PD-1 forms may reproduce such forms if convenient and desired. The announcement stated that, "Anyone who reproduces Form PD-1 must, however, follow exactly the phraseology, the size, the format, and the color of the official blanks furnished by the Division of Priorities."

How to Obtain Preference Rating for Material for Repairs, Maintenance and Operating Supplies

On October 16, 1941, the Office of Production Management issued Order P-22 which grants an A-10 rating for Repairs, Maintenance and Operating Supplies for the Production, Refining, Transportation (excluding pipe lines), and wholesale Marketing Divisions. This rating is extendible from Supplier to Supplier and is designed to enable each operator to meet his immediate requirements for material and equipment.

"Repairs" means the restoration of an Operator's property and equipment to a sound working condition when such property or equipment has been rendered unsafe or unfit for service by wear and tear, damage, destruction of parts, or similar causes.

"Maintenance" means the up-keep of an Operator's property and equipment in sound working condition.

"Operating Supplies" means any Material which is essential to the operation of an Operator's business and which is consumed in the course of such business, including without limitation, fuel, lubricants, catalysts, and small perishable tools, *Provided:* it shall not include any Material which is physically incorporated, in whole or in part, into any product of the Operator, or into any Material which the Opera-

PD-1

ORIGINAL

OFFICE OF PRODUCTION MANAGEMENT
PRIORITIES DIVISION
WASHINGTON, D. C.

No. _____
PRIORITIES SYMBOL

APPLICATION FOR PREFERENCE RATING

Sheet One (page 1 of 4)

Instructions.—Applicant must be *the user* of the material, equipment, or service, excluding labor, hereinafter called "material." A separate application must be filed for each case presented. "Each case" means each need for specific material which can be filled by a *single* Supplier and which is for use in completing a specific contract (except as may be set forth in Par. 4 *b*). Thus, separate orders with a Supplier may be covered by a single application, if the material on each order is similar and for use in completing the *same* covering contract(s). If orders for identical material are placed with *several* Suppliers, a separate application must be filed for *each* Supplier. All information deemed relevant by the Applicant should be included in the application form; if space does not so permit, a supplemental typewritten statement may be attached. APPLICANT WILL RETAIN QUINTUPLICATE, AND SUBMIT COMPLETED APPLICATION IN QUADRUPLICATE TO DIRECTOR OF PRIORITIES, OFFICE OF PRODUCTION MANAGEMENT, WASHINGTON, D. C. PLEASE USE TYPEWRITER.

Date October 1, 1941.

1. John Doe Oil Company,
LEGAL NAME OF APPLICANT
121 - South 3rd Street, Tulsa Okla,
ADDRESS
Apache Field, Caddo County, Oklahoma,
ADDRESS OF PLANTS IN WHICH MATERIAL IS TO BE USED

hereby requests issuance of a Preference Rating on the following material valued at $ 6,780.00

Item No.	Name and Description of Material	Promised Delivery Date(s)
1	6000 feet 7" O.D. 20 lbs. Grade H-40 Range 2, Seamless Steel Casing.	
2	6000 " 2⅜" 6.50 lbs. Grade H-40 Range 2, Seamless Steel Tubing.	
3		
4		
5		
6		

*REQUIRED DELIVERY SCHEDULE	1st Delivery *Date	2d Delivery *Date	3d Delivery *Date	4th Delivery *Date	5th Delivery *Date	6th Delivery *Date	7th Delivery *Date	8th Delivery *Date
ITEM 1	12/1/41	12/20/41						
Unit Quantities	3000	3000						
ITEM 2	12/1/41	12/20/41						
Unit Quantities	3000	3000						
ITEM 3								
Unit Quantities								
ITEM 4								
Unit Quantities								
ITEM 5								
Unit Quantities								
ITEM 6								
Unit Quantities								

order for which has been placed by Applicant with: (If order not placed, check here ☐ *and explain why under Par. 6 a.)*

2. Richard Roe Steel Co. (Delivered through Alpha Bee Supply Co.)
NAME OF SUPPLIER ON WHOM PREFERENCE RATING IS REQUESTED
Supplier's address Pittsburg, Penna. (Ardmore, Oklahoma)
(Alpha Bee Co. Order No.)
Applicant's Order No. 1072 Dated Sept. 21, 1941.

**Delivery Dates are arrival dates of material at Purchaser's Plant. Installment deliveries must be scheduled when partial deliveries will meet requirements. If necessary, delivery schedules may be attached as a part hereof.*

Sheet One (page 2 of 4)

3. If Applicant has pending, or intends to file application for other material for the same product or use for which the material specified in Par. 1 is required, list for each such application:

Name of Supplier	Name and Description of Material	Date of Application
Carnegie Steel	400 Feet 10 3/4" OD - 40.5 lbs. Seamless	PD-1 Sept. 27, 1941.

4. *a.* Supply the following information with respect to *the product* in which the material specified in Par. 1 will be used:

Name and Description of Product	Unit Quantities	Approx. Value	Delivery Date(s) scheduled in Contract(s) or Order(s)	% of Completion of Contract(s) or Order(s) specified in 4 b
This material is to be used in two wells, one to be drilled in SW-NW-NW section 2-5N-12W, and the other in SW-SW-NW section 2-5N-12W, Caddo County, Okla.		$48,000	12/1/41	First well to be started 11/8/41
			1/1/41	Second well to be started 12/10/41

If Preference Rating has been assigned to the product specified in 4 *a*, state Preference Rating None Certificate No.(s) None Unit quantities None

*b.** Identify contract(s) or order(s) for the product specified in 4 *a;*

(1) If Applicant's customer is a governmental agency, state:
Supply Arm or Bureau None Contract No. None
COMPLETE NUMBER

(2) If Applicant's customer is not a government agency, state:
Name
Address
Customer's Order No. Date of order

**If numerous contracts or orders are involved, a Summary, making distinction between government and civilian orders, will suffice in lieu of answers to 4 b (1) and 4 b (2).*

**SUMMARY:*

This well is being drilled by John Jones Drilling Co. of Oklahoma City, Okla. The materials to be used in the well are being furnished by the applicant.

c. Explain how the material specified in Par. 1 (or its ultimate use) is deemed essential to the National Defense Program. If not essential to the National Defense Program, state why application is being made: Production is expected from the Simpson Sand reached at a depth of 3270 feet which in this field will have an estimated ultimate yield of 22,000 bbls. per acre. Offset wells take approximately 60 feet of saturated sand and report initial productions ranging from 1600 to 5000 bbls. per day. Oil is high gravity, 42° - 44°, and is being run to XYZ refinery in A-town which is now producing about 500 bbls. a day of 100 octane gasoline.

ORIGINAL

Sheet Two (Page 3 of 4)

Paragraph 5 is not to be answered if mate...l specified in Par. 1 is a machine tool (or other capital equipment)

5. *a.* State unit quantities of material specified in Par. 1 which are
(1) In stock: Quantity 4,500 ft. Estimated percent of annual consumption 10%
(2) In transit None
(3) Promised for delivery *excluding quantities specified in Par. 1*

b. Will *all* the material specified in 5 *a* be used in completing the contract(s) or order(s) specified in 4 *b*? Yes ☐ No ☒ (Check one.)

c. If answer to 5 *b* is "No," state:
(1) Unit quantities of material specified in 5 *a* which will not be so used:
(2) The use which will be made of material specified in (1):
3500 ft. of the casing specified in 5(a) will be used to case well to be drilled in NE-NW-NW section 2-5N-12W. This well is to be started Oct. 15, 1941 and casing should be run about Nov. 10, 1941. The remaining 1000 feet will be used with the casing for which preference rating is asked in the two wells designated in this PD-1 request.

(3) Relationship of such use to National Defense Program:

This well should produce 42-44° gravity oil from a depth of 3260 - 3340 feet with an expected initial flow of at least 1500 bbls. per day. The oil is to be run to a refinery in "A"-town now producing 500 bbls. per day of 100 octane gasoline of aviation grade.

Applicant should detail fully in paragraphs 6, 7, and 8 what efforts preceding the filing of this application, he has made to satisfy his requirements without a Preference Rating.

6. *a.* State sources of supply contacted:

Name and Address	Results or Replies and Other Details
Have contacted all the commonly known sources of supply.	No material available without priority rating.

b. State efforts to "farm out" parts of contract(s) or order(s) specified in 4 *b*:

Name and Address of Companies Contacted	Results or Replies and Other Details
No contracts to farm out.	

7. What alternatives or substitutes could be used in lieu of material specified in Par. 1:
a. Identify alternatives or substitutes None available.
b. State extent of possible use
c. State unit quantities: In stock Available
d. State effect in terms of price, quality, etc.

143870

Sheet Two (Page 4 of 4)

Paragraph 8 to be answered only if material specified in Par. 1 is a machine tool (or other capital equipment).

8. State basis of operations in plant(s) or department(s) of plant where material in Par. 1 is to be used:

Name and Address of Plant(s)	Hours of Operation per Week	No. of Men on Each 8-hour Shift: First	Second	Third
Does not apply.				

9. Are there any conditions or circumstances, other than delivery of the material on the *Delivery Date(s)* specified in Par. 1, which would interfere with completion on schedule of the contract(s) or order(s) specified in 4 *b*? Yes ☐ No ☒ (Check one.) If "Yes," explain:

10. Additional relevant information which applicant may wish to present:

These wells are to be drilled on 20 acre spacing which was recommended by the lease owners of the field and approved by the Oklahoma Corporation Commission. The wells will be prorated to 300 bbls. per day under the conservation laws of the State of Oklahoma and will be operated according to the best production methods available in order to obtain the greatest ultimate recovery of oil.

Attached is a plat showing location of proposed wells and all other wells and known proposed locations within a radius of one mile.

11. Read carefully and strike out each subdivision of the following to which you are unable to certify and attach a statement of the reason or reasons why such certification is impossible in each instance.

We hereby certify that, to the best of our knowledge and belief, (1) the material specified in Par. 1 is to be used in connection with the production of the contract(s) or order(s) specified in Par. 4 *b*; (2) the inventory of and orders for such material referred to in Par. 5 are and will be used exclusively in connection with the production of the contract(s) or order(s) specified in Par. 4 *b* except as may be set forth in Par. 5 *c;* (3) the material in Par. 1 is essential to the completion of the contract(s) or order(s) specified in Par. 4 *b;* (4) the quantities specified are not greater than needed for the contract(s) or order(s) specified in 4 *b;* (5) the indicated *Required Delivery Date(s)* is not earlier than the actual need for the material specified in Par. 1; and (6) delivery of the material specified in Par. 1 on the specified *Required Delivery Date(s)* will permit completion according to schedule of the contract(s) or order(s) specified in Par. 4 *b*, except as may be set forth in Par. 9.

To be signed and notarized.

Subscribed and sworn to before me this _____ *day of* _____, *1941.*

_____
LEGAL NAME OF APPLICANT

By _____
SIGNATURE OF OFFICIAL AND TITLE

_____
Notary Public.

Facsimile of Form PD-1 showing Application for Preference Rating in securing oil production or refining equipment.

tor distributes to or stores, transports or services for another person.

The terms "Repair," "Maintenance," and "Operating Supplies," *do not* include Material:

1. for the improvement of an Operator's property or equipment through the replacement of Material in the existing installation with Material of a better kind, quality or design;

2. for additions to, or expansion of, such property or equipment;

3. which is of a type not heretofore carried on the Operator's books under "Repair," "Maintenance," "Operating Supplies," or the equivalent.

Order P-22 cannot be used to acquire additional equipment even though the additional equipment may be considered as maintenance.

A Supplier cannot use Order P-22 to acquire material for inventory to be used by his customers in case of breakdowns. He can, however, replenish his inventory by extending the A-10 rating granted for materials sold under this Order.

Application of Preference Rating Under Order P-22

An Operator or Supplier, in order to apply the preference rating to deliveries of Material to him, must endorse the following statement on the original and all copies of the purchase order or contract for such material, manually signed by a responsible official duly designated for such purpose by such Operator or Supplier:

> "Material for Maintenance, Repair, or Operating Supplies—Rating A-10 under preference Rating Order P-22, as amended, with the terms of which I am familiar."

Such endorsement shall constitute a certification to the Office of Production Management that such Material is required for the purposes stated and that the application of the rating is authorized by this Order. Any such purchase order or contract for such Material shall be restricted to Material the delivery of which is rated in accordance therewith.

The Operator or Supplier placing any such purchase order or contract and the Supplier selling the Material covered thereby must each retain endorsed copies of such purchase orders or contracts, segregated from all other purchase orders or contracts, for a period of two years from the dates thereof for inspection by authorized representatives of the Office of Production Management.

The authority granted by Order P-22, by the endorsement of the certification given above, is operative between Supplier and Purchaser, and does not require transmittal of any forms to the Office of Petroleum Coordinator or the Office of Production Management.

It would be advisable for all Operators and Suppliers to obtain a copy of the amended Order P-22 and study it carefully.

If the A-10 rating granted by Order P-22 is not high enough to obtain the necessary scarce Materials for Repairs, Maintenance and Operating Supplies, application for a higher rating should be made on the PD-1 form.

Use of PD-73 Form

A completed PD-73 form is a statement by the customer to the steel producer (which would be the steel mill), classifying his purchase order or contract for steel. In other words, Operators who order steel directly from the mill must complete a PD-73 form and attach it to their purchase order on that steel mill. Under the instructions issued to all producers and purchasers of steel by the Office of Production Management on September 30, Suppliers need file only a single PD-73 form each month covering all orders in a single group classification placed with the producer during the month.

Operators do not need to use form PD-73 when purchasing steel from a supplier who is not a producer of steel.

Application of Supplementary Order M-21-b

Order M-21-b became effective September 2, 1941. This is a supplementary order to M-21, and is designed to give every assistance to steel warehouses in obtaining their reasonable requirements so that small industrial users will not be unduly hampered in obtaining their day to day requirements for defense needs.

A warehouse is considered to be any person who receives physical delivery of steel from a producer of steel for sale or resale in the form received. Steel may *not* be obtained under this order for use in a fabricating shop operated in connection with a warehouse.

A quarterly quota allotment of steel products in 26 classifications may be obtained. Warehouse quotas for hot rolled concrete reinforcement bars, oil country pipe and tubing, wire and wire products, tin and terne plate, and galvanized sheet and strip are established in a directive dated September 26, 1941, copies of which have been distributed to each warehouse by its steel producers.

This order grants an A-9 rating and may be of considerable assistance to many supply houses, both small and large. It is suggested that all those interested should study Orders M-21 and M-21-b.

Project Rating

A priority rating may be obtained for a project such as a drilling program or the construction of a gasoline plant, cycling plant, repressuring plant, pipeline, etc. In order to obtain a project rating it will be necessary to submit, in quadruplicate, a complete prospectus. This prospectus should include detailed plans, and describe the purpose, use, materials involved, costs, and give the required delivery schedule.

How to Obtain Material in Case of Emergency

When a very definite emergency arises an operator must have immediate action. It is necessary that he obtain a preference rating that will enable him to buy, or borrow and replace, the necessary materials. This would apply to additional equipment, or to materials for repairs and emergency inventory when the A-10 rating is not high enough to get results.

When such an emergency arises, telegraphic action may be obtained. The following information must first be wired by the Operator himself:

(a) Date emergency arose, its exact location, and cause of emergency.

(b) Equipment needed and its operating importance.

(c) Supply of requested material which applicant has on hand or has available.

(d) Name and address of supplier from whom the needed material can be obtained.

The Office of Petroleum Coordinator will request the Office of Production Management to dispatch a rating by wire the same day or not later than the following day.

In all cases, the applicant must complete and file with the Office of Petroleum Coordinator a PD-1 form for the material requested by wire. This action is necessary to the completion of the record.

It must be remembered that preparations should be made in advance to avoid delays in operation, and emergency relief should be sought only in those cases where a very definite emergency has arisen *that could not have been foreseen.*

Status of these Instructions

The circumstances of each case must govern the completion of the forms. The instructions set forth above are designed to facilitate such completion and to indicate the minimum information necessary to an adequate analysis of an Operator's application, but do not constitute a single formula into which every case may fall.

To clarify the above instructions there is attached herewith a sample PD-1 form properly completed according to the manner in which requests should be presented. A similar method of handling can be made applicable to any other material or equipment.

The interpretations of all orders are subject to change by the Office of Production Management. The present instructions will stand until changes are made at which time this office will give notification to all interested persons as soon as practicable.

All forms can be obtained from any field branch of the Office of Production Management or any branch of the Federal Reserve Bank.

Stanolind to Expand Laboratories at Tulsa

Stanolind Oil & Gas Company has taken out a building permit for construction of a $110,000 addition to its geophysical and production laboratories at 1136 North Lewis, Tulsa.

The new building will be 325 feet long and will consist of three units, two 80 feet in length and one 100 feet long and will house one of the most complete laboratories outside of some of the large universities.

Southern Electrical Engineers To Meet at New Orleans

A three-day meeting of the Southern District of the American Institute of Electrical Engineers will be held in New Orleans on December 3-5. A program of addresses, entertainment and industrial trips has been arranged.

Cuban Company Plans Processing of Asphalt

Construction of a plant for a recently organized company to process Cuban asphalt for production of motor fuel, gas oil, heavy oil and coke is reported to be under way at Hoyo, Colorado, near Havana. The company, Compania de Combustibles y Carburantes, is building a plant with an initial capacity of 100 tons per day of asphalt. The plant is expected to produce each month 60,000 gallons of motor fuel, 90,000 gallons of gas oil, 30,000 gallons of heavy oil and 1200 tons of coke.

The company reports that an experimental plant near Havana with a capacity of one third ton of asphalt per day has yielded results establishing the economic feasibility of a commercial installation.

Defense Problems Bring Large I. P. A. A. Attendance

Independent Petroleum Association of America in annual convention at Tulsa October 20-22 gave exacting consideration to every branch of the industry in the light of present defense effort and in view of the needs of the petroleum industry. The many questions that have occupied the minds of the oil men, and that have been emphasized by recent statement and action, prompted an unusually large delegation to attend.

Coincident with the meeting of Independent Petroleum Association of America, Oklahoma Stripper Well Association and National Stripper Well Association also convened and elected new chiefs.

The convention was sparked on the serious side with discussion frank and inclusive. The many committee sessions reported on present-day problems, suggestions, trends and requirements. Prices, priorities, demand, transportation, federal control — these matters developed the majority of comment. Scheduled talks were analytical of the present status of the industry in its relation to the entire picture of the defense effort, with suggestions as to future problems being carefully limited to broad statements.

All I.P.A.A. Reelected At Tulsa Convention

All officers of Independent Petroleum Association of America were reelected and present management assistants will continue in office. These are: Frank Buttram, president; Harold B. Fell, executive vice president; R. B. Brown, general counsel; T. J. Steuart, assistant to the president; N. T. Gilbert, treasurer; C. E. Buchner, executive manager; Lawrence E. Smith, director petroleum research bureau; Chas. Van Vleck, field manager; Wm. H. Little, advertising manager, and Minor S. Jameson, Jr., statistician.

Four new Executive Committee members were elected as follows: Wm. H. Wildes, Dallas; J. C. Graves, Saginaw, Michigan; E. C. Moriarty, Wichita, Kansas, and Ralph T. Zook, Bradford, Pennsylvania.

FRANK BUTTRAM

Federal Control Remote

Governor Leon C. Phillips, speaking before a general assembly, gave it as his opinion that the oil industry is more remote from federal control than at any time during the past 10 years. He stressed his belief that priorities will necessarily be provided for drilling of production sufficient to meet all defense needs, and needs of the general public as well.

Congressman W. P. Cole, Maryland, author of the historic Cole Bill and head of the committee that made and reported upon a survey of waste and conservation, offered the suggestion that some form of permanent federal oil bureau be formed. This proposed agency, he explained, should concern itself with the national phases of the industry which are beyond the realm of state power. Cole gave it as his opinion that such a body would not encroach upon the powers of the states, but would "safeguard those rights which in normal times would be vested exclusively with the states." He further suggested that such an office would be a logical outcome of present circumstances and emergency legislation.

Cole further stressed the protection of petroleum as a resource in the interest of the public. He expressed himself as finding encouragement in the efforts of the states and state regulatory bodies in dealing with problems facing the industry but decried the fact that two states failed to follow the same course. He intimated that this reflected unfavorably upon the other producing areas.

Need Materials and Price Increase

Ralph K. Davies, deputy petroleum coordinator, speaking before the general assembly, asked for cooperation between the industry and the coordinator's office. On the subject of price, Davies offered that "For the additional drilling which must be done, and particularly for the hazardous wildcatting that must be continued and increased, you will need not only critical materials but also crude price levels which warrant expensive exploratory search and deep development—this at a time when national economy would be strained by merely inflationary price movements. To prevent inflation, and at the same time to have a price sufficient to find the oil we need, calls for your presenting an adequate showing with respect to the need for finding additional reserves and the costs of discovery and development. Prices fall within the jurisdiction of the Office of Price Administration, but the Petroleum Coordinator is charged with the duty of making such recommendations to that office as he deems necessary, in order to assure an adequate supply of oil. Such recommendations must of course be based upon facts, and armed with the facts, the coordinator is not averse to making recommendations as to price —even increases in price—in fact, regards this as a duty of his office."

Davies stressed a previous statement of his to the effect that the task of coordinating the oil industry for national defense is a dual undertaking, a joint responsibility of industry and gov-

McGaha Reelected President Stripper Well Association

C. P. McGaha, Wichita Falls, Texas, was reelected president of the National Stripper Well Association. Harold B. Fell, Simpson-Fell Oil Company, Ardmore, was renamed executive vice president, and Howard J. Whitehill, Whitehill Oil Corporation, Tulsa, was reelected secretary-treasurer.

State vice presidents elected include: Richard Fenton, Los Angeles, California; Guy T. Berry, Independence, Kansas; Wirt Franklin, Ardmore, Oklahoma; A. H. Ledbetter, Mt. Pleasant, Michigan; Harry Leonard, Roswell, New Mexico; Lee Mulvihill, Robinson, Illinois; W. H. Keffer, Ashland, Kentucky, and Ralph T. Zook, Bradford.

J. B. Milam, Chelsea, Oklahoma, was elected head of the Oklahoma Stripper Well Association.

CHARLES P. McGAHA

ernment. The industry must be mobilized to defense needs, and this applies to production, transport, refining and distribution. In this sense the coordinator's office represents the industry in its relationship with other governmental agencies. This function was further expanded to suggest that federal control as it exists today with respect to the operations of the oil industry do not reside in the coordinator's office. To illustrate: The Maritime Commission has been granted, by statute, authority over all ships, which, of course, includes tankers. OPM has been granted statutory powers over priorities and allocations, which includes the critical materials needed by the petroleum industry. The Office of Price Administration has authority over not only the products of the oil industry, but over the materials which it purchases as well.

Reserves must be added and development must be of such a nature that the industry can meet the increased demands of the next and future years and this can only be done by finding numerous fields in the 100,000,000 barrels class. Davies suggested that the efforts of the coordinator's office in behalf of the industry is complicated by the prevalence of a belief fostered by the oil industry that a virtually unlimited supply of crude is available. The question of tankers withdrawn from coastal service was touched upon lightly but specific comment was withheld by reason of military significance.

Steel Needs Not Guaranteed

Robert E. Allen, director of production in the office of the petroleum coordinator, defined three primary duties of the petroleum industry. The first of these, he said, is to sustain the volumes the Allies of Great Britain find necessary; second, that source must be maintained, and third, the industry must supply sufficient products to satisfy the needs of our own defense effort as well as the requirements of the public. Asked about steel for the industry, Allen, in a question-answer discussion, suggested that there is no positive assurance that an adequate supply of steel will be available but that the department will do its best to sustain this need of the petroleum industry.

Wirt Franklin, deputy coordinator in Region 2, disavowed the danger of drastic federal control during the emergency. He urged wide spacing in new fields and spoke to encourage wildcatting. A special survey is being made in Region 2, he said, with its purpose the determination of what sustained production might actually be available.

Frank Buttram, president of the association, clarified the position of the industry in relation to defense and the present emergency and pointed out that the industry's job is one which it alone must do. While Buttram sustained the thought that the industry recognizes the importance of effective cooperation with those who are directing defense activity, he held that the industry should not permit administration to supercede coordination. He suggested that oil men should not be hampered by bureaucratic control and stated that oil men "cannot work well in chains." He further, in speaking of finding new reserves, pointed out that there must be an incentive in so doing, and that this is in the form of market for the oil so discovered.

Stripper Wells

C. P. McGaha, president of the National Stripper Well Association, spoke on the necessity, during the emergency, of presenting full, factual information as to costs of producing oil, especially in event of price-control legislation. The speaker emphasized the importance of stripper wells and stripper production to the national picture. Speaking before the same group, J. C. Watson, Abilene, Texas, discussed the problems of stripper operators, especially those which have become prominent with the advent of coordination.

H. B. Fell, executive vice president of Independent Petroleum Association of America, suggested that "essential information" be obtained by the proper agencies on which the oil industry could base its operating program during the emergency. Some of such data would be rate of sustained production that could be maintained for one year without waste of reservoir energy; quantity of oil that could be produced, ultimately, from known fields by present methods; estimated demand for petroleum for each of next three years; quantity of oil that can be discovered annually for two or three years to maintain reserves and meet demand; price necessary to effect the required development, and probable amount of equipment needed to produce from existing wells and drill needed new ones. With data such as this, the industry could accurately chart a course. Fundamental to this would be a justified increase in the price of crude, Fell held. He pointed out that a number of wells are being prematurely abandoned because the margin of profit is entirely absent or too small to allow operation and maintenance. Fell also mentioned importation and warned against becoming a victim of discrimination in the matter of taxes which he prophesied would be increased.

Russell B. Brown, general counsel for the association, addressed the membership on Washington activities during the past year. He brought the body up to date on what has taken place and mentioned specifically the trade agreement with Mexico, priorities, duties on defense materials, price and the interstate oil compact. Burdette Blue, former president of Indian Territory Illuminating Oil Company and now an attorney of Tulsa, addressed the gathering on the subject of "Our Rights and Duties Under Temporary Federal Control." He stressed the difference between temporary and permanent control, and warned against using the oil industry as a guinea pig for experiment.

After deliberation and consideration of the many problems now confronting the industry, committees of the convention adopted the following resolutions:

1. That the Connally Hot Oil Law be made permanent.

2. To cooperate to the fullest with the office of Petroleum Coordinator.

3. Urge congressional adoption of a practical program for the prevention of pollution.

4. Urge that a preference be given domestic materials and labor.

5. Urge against unprecedented invasion of state rights in the threatened seizure of tidelands.

6. Suggest amending Internal Revenue Code by removing gasoline taxes from that body of law.

7. Commend Congress for adhering to depletion policy.

8. Urge priorities for a sufficient and continuing supply of materials essential to the oil industry toward satisfaction of demands.

9. Urge against uncalled-for ordering of materials and equipment in excess of current requirements.

10. Adoption of the 88 form of lease relative in general to the question of public lands.

11. Examine and suggest revision of wage-hour laws.

12. On allocation of demand to states and within the limits of national consumptive demand.

13. Limitation of imports not to exceed 4½ percent of current domestic demand.

14. Urge annual declaration of capital stock instead of three-year basis now required by law.

15. Revision in tax legislation.

16. Advancement in secondary recovery art through such action as might be deemed necessary.

17. An expression of loss and condolence in the death of Charles Arthur Lester.

18. Opposition to any attempt to include in expenses for computing net income for determination of depletion allowance, items not directly allocable, applicable or attributable to the net income.

19. Voluntary agreements not to conflict with present statutes.

20. Budget and subscription cooperation.

21. Membership duties and responsibilities.

22. Urge support of Interstate Compact Commission.

23. Resistance to any change in administrative proposals that would adversely effect contract drilling costs and allowance of development costs.

24. Recommend an increased price of crude petroleum and that such be encouraged by the office of the petroleum coordinator and approved by the office of price administration.

25. That a comprehensive survey of the present position of the industry in regards production, reserves, drilling and directly related matters be made.

Natural Gasoline Stocks Drawn on in August

Production of natural gasoline in August reached a daily average of 7,640,000 gallons, compared with 7,116,000 gallons in July, it was reported October 16 by the Bureau of Mines.

The most outstanding increase was in Louisiana, where a large recycle plant was put into operation, but higher output also was reported from the Texas Gulf, East Texas and Panhandle districts.

Total production for the month, the bureau announced, was 236,838,000 gallons compared with 220,584,000 gallons in July.

Despite higher output, stocks decreased during the month, those at plants and terminals dropping from 153,678,000 to 149,058,000 gallons and those at refineries from 111,636,000 to 107,436,000 gallons, it was stated.

Gas Industry Studies Meeting Increased Demand Under Defense Conditions

A RAPIDLY increasing demand for natural gas to meet abnormal industrial requirements based on the national defense program was stressed by speakers at the twenty-third annual meeting of the American Gas Association in Atlantic City, October 20-22. Along with this rising demand have come problems of emergency investments which may or may not prove ultimate losses, and troubles in securing construction materials. Admitting the gravity of these problems, one speaker, however, declared the natural-gas industry "must and will keep the gas flowing."

Possibility of curtailment of gas production on the Pacific Coast this winter because of reduced oil production was pointed out by F. M. Banks, vice president of Southern California Gas Company, Los Angeles. Declaring that about 90 percent of the natural gas available to the company is produced in conjunction with oil, he said the reduction of oil shipments from the Pacific Coast, particularly to Japan, may bring about curtailment of gas output unless the winter proves extremely mild. A further difficulty facing the California industry is the growing reluctance of oil companies to open up high gas-oil ratio wells. "To meet winter peaks," Banks said, "which require several times as much gas as is needed in summer, we normally call on the oil producers to open up high gas-oil ratio wells to provide the extra gas. This the oil companies do with increasing reluctance because they are anxious to use the gas in the structure to aid in raising the oil. Federal regulation of the oil industry could have a further serious effect on the amount of gas available to us if they should order oil production curtailed without regard to gas needs."

Over 400 men in the gas industry attended the meeting of the Natural Gas Section, which was held at Hotel Traymore on Monday afternoon. H. D. Hancock, president of Gas Advisers, Inc., New York, presided. Hancock briefly pointed out the growing importance of natural gas as a raw material for production of such essential materials as hydrogen (for explosives), alcohols, nitroparaffins, isobutane, and basic materials for manufacture of synthetic rubbers. He declared the facilities of the Natural Gas Section are being utilized by the government in the present emergency.

In the election of officers for 1941-1942, J. French Robinson, president of East Ohio Gas Company, Cleveland, was named chairman of the Natural Gas Section, and B. R. Bay, president of Northern Natural Gas Company, Omaha, Nebraska, was elected vice chairman.

Many gas companies are turning to liquefied petroleum gases as alternative and auxiliary fuels, said C. George Segeler, Engineer of Utilization, American Gas Association, in a technical paper dealing with combustion of these gases. Defining liquefied petroleum gases as propanes and butanes and their mixtures, he pointed out an increasing need for utilization of such gases as the severity of peak load requirements for domestic and commercial purposes continue to expand. About 25 utility companies are using the gases as alternative or supplemental supplies. The chief problem in extending the use of such gases consists of finding better means of using them along with city gas.

Peak-load requirements seem most easily met by the use of readily liquefied petroleum gases because they require a minimum of investment for a maximum of capacity. Gas companies, in addition to seeking means to meet peak-load demands, are turning to liquefied petroleum gases for the following purposes: (1) reducing purchases of natural gas, (2) reducing dependence on often variable supplies of gas produced in oil fields, (3) providing gas supplies close at hand to meet possible interruption of supplies carried from a distance, (4) meeting unexpectedly heavy demands due to cold weather, (5) providing quickly available supplies during intervals of starting manufactured gas facilities to meet emergencies, (6) increasing peak load capacities of manufactured gas companies operating at near the maximum output, (7) raising heat values of manufactured gas.

Discussing the technical problems involved in using liquefied petroleum gases, Segeler said propane and butane, alone, can not easily be mixed to any great extent with existing gas supplies because of their high specific gravities and high heat values. Four important properties of such substitute gases to consider are: amount of air needed for combustion, heating value, specific gravity and ignition and burning characteristics. An ideal substitute would be a gas in which these properties were the same as those of the gas replaced. The fact that propane and butane do not approach this ideal makes it necessary to mix them with various "carrier gases" to make them more easily interchangeable with the gas supply they are to replace or supplement. Air has been the generally used carrier gas because of its cheapness. However, the use of air is accompanied by certain difficulties which call for the development of other types of carrier gases. Segeler presented results of studies in blending various inexpensive carrier gases, such as reformed natural gas, coke-oven gas, cracked natural gas with steam, blue gas, producer gas, partially burned natural gas, and air, with propane to make replacement fuels for natural gas. The results showed that propane mixed with reformed natural gas or with coke-oven gas came nearest to giving an ideal mixture to replace natural gas. Propane-air mixtures, used in many actual standby plants were farthest from the ideal.

Gas companies are using liquefied petroleum gases in several ways. One is blending such gases with air to replace natural gas. Company reports indicate that blends are being made to replace up to 100 percent of the regular natural gas service. A second method of utilization consists of mixing butane or propane with water gas and then blending this mixture with natural gas. A number of companies follow this method. A third method of using liquefied petroleum gases is blending them with manufactured gas for enrichment purposes, but economic and technical reasons limit its availability. Segeler concluded his paper with a list of gas companies employing liquefied petroleum gases in the various ways.

Regional Problems

In a discussion of regional problems presented to gas companies in the national defense program, A. F. Bridge, vice president of Southern Counties Gas Company, Los Angeles, reported that Pacific Coast natural gas companies are struggling with heavy demands created by the growth of defense industries in California. Because of demands for gas expected to develop this winter, many industrial consumers were asked months ago by gas companies to install oil-burning equipment and storage facilities in order that they may change over to fuel oil if gas curtailment becomes necessary. Southern Counties Gas Company, although having to revise plans for erection of a number of gas holders and pipe lines because of the priorities situation, has been bale to erect a total of 12,000,000 cubic feet of storage and build 16 miles of 18-inch pipe line to increase service to the Los Angeles district by 25,000,000 cubic feet daily. One important project which will help the winter supply situation in southern California was completed during the summer at the Goleta gas field, west of Santa Barbara. In this field a company has installed a compressor plant and has been injecting up to 33,000,000 cubic feet daily into the structure. Ten to eleven billion feet may be injected into the field over and above the gas now in the structure. The plan is to inject surplus gas into the field during summer months and withdrawing it during peak and emergency needs.

Speaking for the Southwest, D. A. Hulcy, president of Lone Star Gas Company, Dallas, said it will cost his company over $1,000,000 to install pipe lines needed to meet current requirements, largely those of national defense. In the Southwest, airplane plants, diesel engine plants, chemical companies and new communities of workers and military forces have placed a heavy load on present facilities of the natural gas companies. Shortages of materials for line and storage equipment constitute a serious challenge to the southwestern companies.

A grave view of the immediate future facing the natural gas industry of the

Middle West was presented by B. R. Bay, president of Northern Natural Gas Company, Omaha. On the favorable side are the facts of marked increases in demand for gas from the munitions and aircraft factories and the army posts. On the unfavorable side are such factors as rising costs of materials, difficulties in obtaining priorities for materials, and risks attending new investments. Bay felt that the unfavorable factors outweigh the favorable elements, but concluded that the natural gas industry will do its part in the "all out" effort.

An optimistic view of the future of natural gas use in the Appalachian region was expressed by D. P. Hartson, operating manager of Equitable Gas Company, Pittsburgh. He declared that natural gas is replacing other fuels not as susceptible to control as is gas. There is a rising demand for natural gas in the steel, non-ferrous and glass industries. This demand has called for a spurt in gas-well drilling in the region. In 1940, 1627 gas wells were drilled, whereas in this year, 2330 were drilled. The Appalachian gas supply, Hartson said, is limited, and this will require increasing supplies from the Southwest. There are 44,380 producing gas wells in the Appalachian region, producing at an average of 40,000 cubic feet per day each.

In the Great Lakes area, where cities are supplied largely with natural gas or mixed gas or have plans for introduction of natural gas in the near future, the capacity to produce this gas is proving equal to rising national defense requirements, said J. W. Batten, vice president of Michigan Consolidated Gas Company, Detroit. Plans have been made for introduction of natural gas into most of the central Michigan cities. The lake cities of Wisconsin are considering its utilization. Although productive capacity is at a favorable level, trouble is encountered in some localities in expanding transmission lines. The company supplying Detroit and planning to supply populous centers in Central Michigan has vainly sought for several months to secure the pipe needed to expand the Detroit service and institute central Michigan service.

New A.G.A. Officers

American Gas Association officers elected at Atlantic City for the 1941-1942 period are: President, George S. Hawley, president of Bridgeport Gas Light Company, Bridgeport, Connecticut; Vice President, A. F. Bridge, vice president and general manager, Southern Counties Gas Company, Los Angeles; Treasurer, Ernest R. Acker, president, Central Hudson Gas and Electric Corporation, Poughkeepsie, New York.

Directors with two-year terms are: Walter C. Beckjord, vice president and general manager, Columbia Gas & Electric Corporation, New York; C. M. Cohn, executive vice president, Consolidated Gas Electric Light and Power Company, Baltimore; Watson E. Derwent, vice president, George D. Roper Corporation, Rockford, Illinois; Ralph L. Fletcher, vice president, Providence Gas Company, Providence, Rhode Island; R. H. Hargrove, vice president and general manager, United Gas Pipe Line Company, Shreveport; D. A. Hulcy, president Lone Star Gas Corporation, Dallas; Bruno Rahn, president, Milwaukee Gas Light Company, Milwaukee; Louis Ruthenburg, president, Servel, Inc., Evansville, Indiana; E. J. Tucker, general manager and secretary, Consumers Gas Company, Toronto, Canada; H. Carl Wolf, president, Atlanta Gas Light Company, Atlanta.

Thomas R. Weymouth, recently retired vice president of the Columbia Gas and Electric Corporation, New York, received the Charles A. Munroe award, highest honor within the gift of the American Gas Association, for having made the most notable recent contribution toward the advancement of the gas industry. (See page 75.)

Natural Gas and Gasoline Coordination Discussed

Declaring that the natural gas and natural gasoline supplies of the country must be coordinated into the national defense program in the same manner as have those of the oil industry, Robert E. Allen, director of production in the oil coordinator's office, told representatives of the two industries October 23 that a natural gas and natural gasoline industry committee will be set up in each of the 5 petroleum districts in the immediate future.

Speaking at a conference in New York called by the coordinator to discuss the defense efforts of the two industries, Allen explained that the chairmen of the committees will serve as members of the already-existing general committees, but the natural gas and gasoline industries will be "in no sense or in nowise subservient to these petroleum industry groups."

Each committee will consist of 8 members, who will be nominated by the industries, familiar with the functional divisions of the two branches.

Meanwhile, because of the fact that there are several federal agencies having responsibilities and duties with respect to the natural gas and natural gasoline industries, the coordinator's office will hold a conference with those agencies to draft plans for the coordination of all federal activities affecting the two industries.

Allen told the conference that there are a number of problems of general character which it will be necessary immediately to deal with.

"Production of natural gas must be so arranged as to insure the maintenance of adequate supply and the conservation of an invaluable natural resource," he said. "Cycling or repressuring programs must be developed for many of the condensate or distillate fields. A good deal of thought must be given to the best utilization of natural gas and natural gasoline both by processes, regions and industries. We must particularly stress the problem of the production and utilization of iso-pentanes, butanes and iso-butanes for the manufacture of aviation gasoline. We must maintain our transportation facilities at peaks of efficiency; perhaps new lines must be built in various sections of the country, certainly we must devise plans to more efficiently use our existing facilities.

"We must face the very tough problem of maintaining a constant steady supply of natural gas to industries that are truly producing for defense. And fundamental to all of your deliberations you must recognize that the materials and supplies needed to keep your industries functioning are no longer readily available in large quantities, but that the imposition of priorities upon the basic materials or finished products you need and use have raised serious problems of maintenance, repair and expansion."

A.P.I. Special From Texas Selling Out

RESERVATIONS for the special train from Texas over the Southern Pacific to the American Petroleum Institute meeting in San Francisco have been pouring in and as the past week closed it was apparent that the full possible limits of a special might be reached.

The special originates in Houston, but cars from Dallas and Fort Worth over the Texas Pacific will be made a part of it from El Paso on.

The special leaves Houston at 5 p.m., Thursday, October 30, arrives in El Paso at 2 p.m., Central Standard Time (1 p.m. Mountain time). It arrives in Los Angeles at 9:30 on Saturday morning, November 1.

The train will remain in Los Angeles all day in order to allow passengers to attend a football game that afternoon between U. C. L. A. and University of California, or to make such side trips in and around Los Angeles as may be desired. Leaving at 8:05 p.m. Saturday the special arrives in San Francisco at 8:45 Sunday morning.

The equipment will consist of compartment and drawing room cars, ordinary Pulllman cars, a baggage car, diner and lounge. Reservations should be made at the Southern Pacific ticket office in Houston, or the Texas & Pacific offices in Dallas and Fort Worth.

Lacy to Install Gathering System in Hawkins Field

Roger Lacy, Longview, Texas, operator, has purchased pipe for the installation of a crude gathering system in the Hawkins field, most active drilling center in East Texas. He will connect his 13 completed wells, and also solicit outside connections to apply on sales to asphalt processing companies. Deliveries will be made from a tank car rack near Hawkins on the Texas Pacific Railroad. Humble Pipe Line Company is the only outlet at present for the 175 producers, which average 35 barrels daily.

Lateral Line Authorized

Sinclair Refining Company, pipe line division, has authorized the immediate installation of a 5-mile 3-inch lateral from its North Texas trunk line near Antelope to the new Jack County discovery completed by Taubert, McKee and Sinclair Prairie Oil Company.

Pump Station Planned

Magnolia Pipe Line Company will erect a diesel-powered reciprocating pumping station in the Slaughter field, West Texas, to boost its capacity to 13,000 barrels daily. The company's 51-mile 8-inch gravity carrier from Slaughter to Seminole has a capacity of 6700 barrels daily.

"THIS REEL OF TIGER BRAND SET A NEW RECORD"

A Tiger Brand Wire Line Engineer reports to his boss . . .

Drove out to the McGordon location this morning, talked to the boys awhile and started to look at a big reel of American Tiger Brand they had out there.

The Superintendent drove up about that time and walked over, laid his hand on the reel and said, "Here's the best wire line we've ever had—this reel of Tiger Brand set a new record. Have yet to hear of another line in the field that can touch it in ton-mileage."

You don't have to stop and figure out why this outfit will use only American Tiger Brand Wire Lines!

Bill

YOU can safely turn your wire line problems over to an American Tiger Brand Wire Line Engineer. These men spend their time where lines are being used — they know what punishment they have to take, and what you can do about stretching your wire line dollar. They know wire lines—and they know their job. When you need help, call one of them. You can rest assured that you'll get the most practical recommendations—and in a hurry, too!

American Tiger Brand Wire Lines are made in all constructions and grades, and are quickly available throughout the oil fields. Write us for details, and ask for one of our engineers to call and check over your lines—no obligation at all.

AMERICAN
Tiger Brand
WIRE LINES
Excellay Preformed

LOOK FOR THE TIGER
Buy wire lines from the distributor who displays this sign.

AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York
COLUMBIA STEEL COMPANY
San Francisco
United States Steel Export Company, New York

UNITED STATES STEEL

Production and Runs Set New Records; Eastern Stocks Up

In response to the continued unprecedented demand for petroleum products, the industry has further boosted crude production and refinery runs into new high ground, having set new records again in the week ended October 18.

Moreover, remarkably good results are being achieved now in supplying the East Coast, with rail shipments increasingly relieving the threatened scarcity in that region.

The record-breaking crude oil production of 4,110,550 barrels daily in the week of October 18 was 12.1 percent greater than the output in the corresponding week last year, an increase closely in line with the expansion in demand.

Crude runs to stills, in establishing a new record of 4,120,000 barrels daily, were 16.7 percent above the daily average of 3,529,000 barrels for October of last year, this gain being even larger than the increase in demand. The plants thereupon were operating at 95.7 percent of rated capacity, and those on the East Coast had ample crude available to step up throughput sharply, to 684,000 barrels daily, from 636,000 the week before, or to 101.6 percent of rated capacity from 94.5 percent the previous week. In most other districts east of the Rockies, similarly, refineries were operating around full capacity, while those in the Rocky Mountain area were at 81 percent and those in California at 77 percent.

For the United States, there was within the week a 1,200,000-barrel, seasonal build-up in gasoline stocks to 82,584,000 barrels, which was 2,000,000 barrels more than the inventory at the corresponding time last year. Stocks of light-fuel oil meanwhile were increased 1,100,000 barrels to 52,403,000, and the latter amount was 3,500,000 barrels (7 percent) larger than the total on hand a year previously. The stocks of residual fuel oil were increased about 275,000 barrels to 95,800,000, and although the latter quantity was about 11,500,000 barrels smaller than stocks a year earlier, that whole difference was accounted for by California, the storage of the rest of the country being about the same now as a year ago, as the 1,700,000-barrel decrease for the East Coast is compensated by increases on the Gulf Coast and in the Middle West.

Figures on changes in stocks on the East Coast revealed that much better results were achieved in replenishing storage for the week ended October 18 than in the corresponding week last year. The changes were as follows:

Product	Change in East Coast Stocks in Week Ended Oct. 19, 1940 (Barrels)	Change in East Coast Stocks in Week Ended Oct. 18, 1941 (Barrels)
Gasoline	— 42,000	+1,172,000
Gas Oil and Distillate Fuel	+190,000	+ 794,000
Residual Fuel Oil	—221,000	+ 649,000
Total for 3 Major Products	— 53,000	+2,615,000

The present East Coast gasoline inventory of 19,559,000 barrels is a little larger than that of 19,477,000 barrels held at this time last year. The Eastern inventory of light-fuel oil is nearly 2,000,000 barrels above a year ago, totaling 20,212,000 barrels against 18,444,000. Residual fuel oil in the East Coast district amounts to 10,875,000 barrels, or 1,700,000 less than the stocks of 12,582,000 barrels held a year ago.

More Crude Output May Halt Move for Increase in Price

Crude-oil prices remained unchanged last week, while price-control authorities at Washington had under advisement petitions for authority to raise postings in Pennsylvania and the Mid-Continent; and prices of refined products were influenced by the uncertainty surrounding the crude market having shown practically no changes.

Producers generally felt that little or no argument was possible as to the justification of proposed crude raises, inasmuch as statistics showed conclusively that crude postings have stood still for four months while prices of all other commodities in the aggregate have further advanced substantially.

However, it was recognized that the government was making no secret of its efforts to hold down prices, and there was a hint last week that maybe the government would attempt to relieve pressure against it for higher crude postings by encouraging increased production and more plentiful supplies for meeting present record-breaking demand.

This hint came in the form of an unconfirmed report that the petroleum coordinator's office was asking important oil-producing states to increase allowables for November. Lending credence to the report, although not verification, was the fact that coincidentally, Chairman E. O. Thompson of the Texas Railroad Commission took an unusual attitude at a Texas proration hearing in advocating all possible production without physical waste, in order to have large supply above ground in the present emergency.

The Bureau of Mines has stated, also, that relatively large production would be desirable, to stop withdrawals from crude storage and to assure ample supply for meeting the heavy demand of next year. And in estimating market demand for domestic crude in November, the bureau showed need for 60,000

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[3]278,607,000	86,216,000	26,167,000	108,597,000
August 5	[2]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]3,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[3]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[1]48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[3]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 29	3,746,550	3,625,000	266,187,000	[2]99,727,000	29,949,000	96,152,000
April 26	3,726,850	3,675,000	266,149,000	96,647,000	29,543,000	94,732,000
May 31	3,786,100	3,699,000	262,356,000	93,845,000	33,524,000	92,757,000
June 28	3,847,250	3,930,000	259,399,000	91,461,000	35,732,000	92,896,000
July 12	3,870,750	4,090,000	255,567,000	89,561,000	37,812,000	92,699,000
August 2	3,695,250	3,845,000	252,535,000	86,779,000	41,433,000	94,800,000
August 30	4,004,700	4,070,000	249,413,000	81,672,000	45,351,000	95,052,000
September 27	4,060,000	3,980,000	246,649,000	81,003,000	49,950,000	95,251,000
October 4	3,860,750	4,015,000	246,144,000	80,870,000	49,553,000	96,016,000
October 11	4,070,950	4,075,000	243,571,000	81,381,000	51,289,000	95,527,000
October 18, 1941	[1]4,110,550	[1]4,120,000	.....	82,584,000	52,403,000	95,800,000
October 18, 1940	3,667,550	[5]3,529,000	[4]261,511,000	80,414,000	48,943,000	107,236,000
Change in past year.	+12.1%	+16.7%	—6.9%	+2.7%	+7.1%	—10.6%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, Oct. 12, 1940.
[5] Lowest since October, 1922, due to shut down of six Mid-Continent states. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] October, 1940, daily average.

barrels a day more than the estimate for October, including an increase of 35,000 barrels for Texas.

Oklahoma has been consistently producing less than demand and taking crude out of storage, and the November forecast recognized that situation by cutting back the estimate of demand for Oklahoma while raising Texas, Mississippi, New Mexico, Louisiana, Illinois, and Michigan quotas.

Heretofore, there has been steady liquidation of crude stocks in Oklahoma and Illinois, as storage oil has supplied the requirements in excess of the current output of wells; while all the oil produced in the other principal source states has been absorbed, as evidenced by stationary levels of stocks. For the country as a whole, therefore, there have been steady reductions in stocks, in reflection of those in Oklahoma and Illinois.

The relative scarcity of crude which consequently has prevailed naturally has been conducive to tight markets and eventually to agitation for a general crude raise.

Conversely, it is to be expected that stepping up of production would loosen up the market and relieve the hitherto increasing pressure for higher crude prices.

The idea that the government might be deliberately inviting increased crude production with the purpose of discouraging high crude prices appeared to be strengthened last week by persisting reports that the Office of Price Administration had rejected the request of Pennsylvania producers for res-

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE	Range Last Week (Cents a Gal.)		Changes from Week Before	
Oklahoma Refineries:				
60 Octane and Under	5¼	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	6¾	7¼	...	...
Mid-Western Tank Car:				
60 Octane and Under	5¼	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	7⅜	7⅜	...	...
New York Harbor:				
68-70 Octane	8	8	...	...
72-74 Octane	8	8½	...	...
Min. 80 Octane, '39 Research	8½	9	...	...
Gulf Coast:				
60 Octane unleaded	5½	5¾	...	...
65 Octane unleaded	5¾	6	...	...
68 Octane unleaded	6¼	6½	...	...
70 Octane unleaded	6¼	6⅝	...	...
72-74 Octane leaded	6¼	6⅜	...	...
Min. 80 Octane, '39 Research	6½	6¾	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	5⅛	5⅛	...	...
F.O.B. Br'kenr'ge, Tex.	4¾	4¾	...	...
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4⅜	4¾	...	...
42-44 water white	4½	4⅞	...	...
Mid-Western Tank Car:				
41-43 water white	4⅜	4¾	...	...
42-44 water white	4½	4⅞	...	...
New York Harbor	5⅜	5¾	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅜	...	...
In Mid-Western Market Group 3, basis	4	4¼	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3½	4⅛	...	...
No. 3	3½	3⅝	...	...
Mid-Western Tank Car:				
No. 1 white	3⅞	4⅛	...	...
No. 3	3½	3⅝	...	...
New York Harbor:				
No. 1	5⅜	5¾	...	...
No. 3	5¼	5¼	...	...

HEAVY FUELS	Range Last Week (Per Bbl.)		Changes from Week Before	
Oklahoma Refineries:				
No. 6	$0.80	$0.90	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.85	.87½	...	...
New York Harbor:				
No. 5	1.65	1.75	...	...
No. 6	1.35	1.50	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$0.95	...	...
New York Harbor	1.35	1.50	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.80	...	+.25
New York Harbor	2.15	2.15	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	22½	23	...	...
Neutral oil pale No. 3 Color, 150 viscosity at 100°, 0-10 pour test	14½	14½	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	25	27½	...	...
Neutral Oil No. 8 Color, 150 viscosity at 70°, 25 pour test	31	31	...	...

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (October)	State Allowable (Barrels Daily in October)	BARRELS DAILY FOR WEEK ENDED Oct. 18	Oct. 25
TEXAS:				
Texas Panhandle	.....	.....	80,500	80,100
North Texas	.....	.....	104,600	104,950
West Central Texas	.....	.....	31,200	31,250
West Texas	.....	.....	283,400	283,550
East Central Texas	.....	.....	85,800	85,950
East Texas Field	.....	.....	370,100	368,600
South Texas	.....	.....	220,300	220,750
Texas Gulf Coast	.....	.....	292,600	296,600
Total Texas	1,420,100	1,433,957‡	1,468,500	1,471,750
CALIFORNIA:				
Long Beach	.....	.....	38,000	37,600
Midway-Sunset	.....	.....	49,000	44,000
Kettleman Hills	.....	.....	40,500	39,700
Wilmington	.....	.....	88,500	86,400
Others	.....	.....	448,500	435,900
Total California	613,200	613,200*	664,500	643,600
OKLAHOMA:				
Oklahoma City	.....	.....	79,050	84,450
Seminole Area	.....	.....	112,175	112,650
Others	.....	.....	227,025	228,350
Total Oklahoma	481,500	428,000	418,250	425,450
ILLINOIS:				
Salem	.....	.....	77,500	77,200
Louden	.....	.....	62,050	62,650
Centralia	.....	.....	9,000	9,200
Other New Pools	.....	.....	261,700	261,100
Old Pools	.....	.....	12,300	12,250
Total Illinois	399,200	.....	422,550	422,400

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (October)	State Allowable (Barrels Daily in October)	BARRELS DAILY FOR WEEK ENDED Oct. 18	Oct. 25
LOUISIANA:				
North Louisiana	.....	.....	80,300	80,350
South Louisiana	.....	.....	265,500	264,350
Total Louisiana	332,000	339,233	345,800	344,700
KANSAS	253,000	253,000	259,800	255,500
NEW MEXICO	114,600	114,600	116,500	117,400
EASTERN STATES:				
Pennsylvania Grade	73,800	.....	75,300	75,600
Others, Eastern	24,300	.....	18,200	18,500
Total Eastern States	98,100	.....	93,500	94,100
MOUNTAIN STATES:				
Wyoming	84,300	.....	90,100	86,500
Montana	20,300	.....	20,200	20,250
Colorado	5,000	.....	4,800	4,800
Total Mountain States	109,600	.....	115,100	111,550
MICHIGAN	44,100	50,000†	56,800	58,400
INDIANA	20,100	.....	19,500	18,900
ARKANSAS	78,200	73,415	71,500	72,600
MISSISSIPPI	43,900	.....	64,400	67,200
NEBRASKA	4,300	.....	6,650	6,100
§Total 8 Prorated States	3,336,700	3,305,405	3,401,650	3,389,400
Total United States	4,012,000	.....	4,123,350	4,109,650

*Recommendation of Conservation Committee of California Oil Producers

†Estimate of actual production under prescribed regulations, which do not fix a definite state total allowable.

§Texas, California, Oklahoma, Louisiana, Kansas, New Mexcio, Arkansas, Michigan.

‡Calculated daily average of actual production at beginning of October, allowing for usual under production of 3½ percent below net allowable, which was figured as of October 1, at 1,485,966 barrels daily. However, allowable normally increases as new wells are completed, and actual daily average production for month is expected to conform with Bureau of Mines Estimate of demand. Under October order, most Texas fields were ordered shut down October 4, 5, 11, 12, 18, 19, 25, 26 and 31. Panhandle was ordered shut down October 5, 12, 19 and 26.

toration of the 23-25-cent advance in Pennsylvania-grade crude prices, which the agency ordered rescinded when posted in August; although OPA's information section insisted that no decision had been reached.

Meanwhile, the Office of Price Administration sent to the petroleum coordinator a copy of its study of the Mid-Continent crude-price situation, in which Phillips Petroleum Company and other purchasers have proposed to advance postings 25 cents a barrel.

Refined-oil markets currently are firm, but they do not evidence any serious difficulties of suppliers in meeting requirements. On the East Coast, restriction of gasoline deliveries to service stations is scheduled to continue in November, and that curtailment of demand below normal requirements, plus greatly stepped up deliveries of oils into the district by tank car, is causing relatively free markets and absence of stimulus to rising prices.

In the Middle West, it is reported that more gasoline is offered than is being sold, with the result that the market for that product is easing; although demand for light and heavy fuel oil is brisk.

Mid-Continent refiners report continued heavy shipments of gasoline against contracts and a firm but not tight market for that product, while deliveries of light fuel oil are about normal for the season.

Production Down; Still Above Bureau Estimate

Having averaged 4,109,650 barrels daily in the week ended October 25, United States crude oil production was 13,700 barrels lower than in the previous week. The output was 97,650 barrels greater than the daily average market demand for domestic crude as estimated for October by the Bureau of Mines.

Texas showed an increase of 3250 barrels, having averaged 1,471,750 barrels daily against 1,468,500 the week before.

California showed a decrease of 20,900 barrels in averaging 643,600 barrels daily. Oklahoma was up 7200 barrels, to 425,450 barrels daily. Illinois registered a decline of 150 barrels, having averaged 422,400 barrels daily. Louisiana produced 1100 barrels a day less than in the previous week in averaging 344,700 barrels. Kansas output was down 4300 barrels, at 255,500 barrels daily.

Oil Demand Soars

[*Continued from page 14*]

diminished; that the yearly discovery rate has fallen off 60 percent since 1937. The annual rate of discovery in recent years, according to the report, has been as follows.

Year	Annual Rate of Discovery (Barrels)
1935	1,220,000,000
1936	1,763,000,000
1937	3,723,428,000
1938	3,055,233,000
1939	2,399,828,000
1940	1,893,350,000
1941 (Estimated)	1,500,000,000

The indicated discoveries of 1,500,000,000 barrels for 1941 barely compensate for the 1,380,000,000-barrel draft on reserves (production) during the year; whereas yearly discoveries should be materially greater than current production, considering that consumption is steadily growing.

For 1941 as a whole, total demand, domestic and export, will be about 9 percent greater than that for 1940, according to Dr. A. G. White of the Bureau of Mines, with the domestic use up 13 percent and exports off 33 percent. In the first quarter, total demand was up 4 percent, as domestic consumption showed an increase of 8 percent. In the second quarter, total demand was up 8 percent, with domestic use showing a gain of 13 percent. In the third quarter, total demand was up 13 percent and domestic was up 18 percent. For the fourth quarter, a drop-back to 9 or 10 percent in the gain for total demand is indicated, he said, with domestic consumption likely to show a gain of 12 percent, in reflection of a reduction in "business as usual," because of increasing defense activity. The fourth quarter trend of demand is expected to continue also into 1942.

For 1942, the best estimate of total demand, apparently, is an amount 6 or 7 percent greater than that for 1941, according to Dr. White, who recently told the Interstate Oil Compact Commission at Fort Worth that a forecast for the year was especially difficult, in view of extraordinary circumstances and possibilities, which might boost the increase to 10 or 12 percent, but which, on the other hand, might prevent any increase at all. By quarters, he calculated that the gains, on the basis of a 6 or 7 percent increase for the year, might be as follows: 10 or 12 percent for the first quarter, 8 or 10 percent for the second quarter, and possibly 3 or 4 percent for the third and fourth quarters.

Trends of demand, domestic and export, are shown in accompanying charts and in the table giving latest detailed figures of the Bureau of Mines, covering the month of July and the first 7 months of this year.

District 2 Committee Suggests Better Prices

Premature abandonment of small wells and the steel priorities situation were studied by the District 2 Production Committee at a recent meeting in St. Louis. The meeting was presided over by O. D. Donnell, chairman.

At the request of Robert E. Allen, Director of Production in the Office of the Coordinator, the committee gave consideration to the reported trend of premature abandonment of small wells, the equipment and materials thus obtained being used in newer or more profitable areas. The information submitted by the various members of the committee from their respective states, indicated there is already a marked trend in this direction. It was the opinion of the committee that an immediate increase in the price of crude oil is necessary in order to prevent this premature abandonment of small wells, thereby making it possible to conserve these crude oil reserves for the nation.

The committee again gave consideration to the priorities situation and the present difficulty of securing adequate equipment and materials and supplies by the producing branch of the petroleum industry. The committee is of the opinion and will continue its recommendations to the Petroleum Coordinator that sufficient steel should be allocated by the Office of Production Management to assure the maintenance of efficient operation of present production facilities, as well as the continuation of exploration and wildcatting necessary for the development of new crude oil reserves to assure the nation, so far as District No. 2 is concerned, with a continued adequate supply of petroleum and its products for both defense and civilian needs. The committee will continue to cooperate with the Coordinator in every way possible to bring about a successful solution of this pressing problem in the interest of national defense.

Through a setup of temporary subcommittees, the District No. 2 Production Committee is continuing its survey of conditions in District No. 2, with particular reference to this premature abandonment of small stripper wells, and also preparing as accurate an estimate as possible by the industry itself of the new equipment, materials and supplies that will be needed by the operators in this district over the balance of this year and for the entire year of 1942.

Start Wildcat Test on Promising Alberta Structure

Plans have been completed by Royal Sun Petroleum Company for an important test of promising new structure 30 miles southwest of Turner Valley, Alberta. President of the company is Russel V. Johnson, Alberta geologist.

The first well will be carried to a depth of 3500 feet. A road has been built out to the location and timbers for the derrick are now on the field.

Although they are prepared to carry the 4½-inch hole down 3500 feet results are looked for at around the 1500-foot level. The location of the well is on the Livingstone river and the structure is about 10 miles in length and two miles in width.

The company is privately financed by a group in Montreal.

U. S. FIELD OPERATIONS

Illinois Basin

Wildcat Shows Extensions Reported in Several Sections

Casing set to Aux Vases sand at Saline County wildcat; Wayne County wildcat makes producer; Richland County field extended and Richland County pool opened; White County wildcat swabbing oil; Clay County test shows commercial possibilities.

Saline County: Frank Summers' Roberts 1, SE SW NE 6-8s-7e, eight miles north and four miles east of Harrisburg, waiting on cement with pipe on Aux Vases at 2950 ft; total depth 2971 ft. Only production in the county to date is a small McClosky producer about a mile and a half from Roberts 1.

Wayne County: Bell Brothers' Fuhrer 1, C W½ NE NW 33-1s-6e, 6 miles south of Johnsonville field, swabbed 154 barrels of oil in 16 hours through tubing after a 2000-gallon acid treatment in McClosky at 3158-67 ft, but during the test the well was shut down at several brief intervals; drilling ahead with cable tools for second break in McClosky. Midway between the Johnsonville field and Bell Brothers' discovery, Kingwood Oil Co.'s O'Neil 1, C W½ SE SE 17-1s-6e, cored saturation in McClosky which on drill stem at 3157-62 ft showed 340 ft of oil and 160 ft of oil-cut mud and no water in one hour. Saturation in Aux Vases at 3031-41 ft yielded 120 ft of oil-cut mud on a drill-stem test.

Richland County: Central Pipe Line and R. B. Martin's Kent Community 1, C N½ SE NE 31-2n-14w, drilling plug to test McClosky pay at 3116-23 ft; this well will extend Parkersburg field a half mile southwest into Edwards County.

E. G. Nolf and associates' Nuding 1, C W½ SW NW 6-4n-14w, five miles from Olney field, swabbing oil from McClosky lime at 3028-36 ft; estimates on production range from 150 to 250 bbls a day.

White County: First National Petroleum Co.'s Reeves 1, NW SW 20-3s-14w, three-fourths of a mile southwest of Grayville, swabbing at rate of 100 bbls of fluid a day from Biehl sand at 1868-88 ft. About 75 percent of the fluid is oil and the balance is water. The test, if successfully completed, would open a new field and possibly touch off a townsite test in Grayville.

Clay County: Carter Oil Co.'s Keller 1, C W½ SW SW 4-2n-5e, recovered 90 ft of oil and 180 ft of oil-cut mud on drill stem of Aux Vases at 2794-99 and 2799-2805 ft, coring ahead in formation. The test is one mile west of Xenia in wildcat territory. Also in the Xenia area is Cherry-Kidd's John Rudolphi 1, NE NE SE 1-4n-8e, another wildcat, drilling at 2300 ft.

Jefferson County: Carter Oil Co.'s Sanders 3, C SE SE 4-1s-2e, Devonian test in Dix field, drilling 2840; cored 17 ft of fair saturation in Aux Vases sand; field's present deepest producing zone is Benoist sand.

Indiana

Posey County: A prospective pool opener two miles northwest of Mt. Vernon, Carter Oil Co. and Gulf Refining Co.'s Maier 1, C N½ NE SW 1-7s-14w, was coring Tar Springs at 2176 ft, after commercial saturation indicated in Waltersburg at 1965-2015 ft. Best Waltersburg pay at 1965-72 ft flowed oil on drill-stem test after 45 minutes. Remainder of the sand saturation, at 1992-2015 ft, was broken by intervals of shale. Hole probably will be deepened to the St. Louis before product on test. Carter and Gulf hold the bulk of the surrounding acreage.

Haynes & Thomas and Lloyd Sloan's Pauline Scherer 1, NE NE NW 13-7s-13w, 3½ miles east of Mt. Vernon, was swabbing 3 bbls of oil an hour after 8-quart shot in Tar Springs sand at 1937-49 ft, showing for a new pool.

Oklahoma

Three Fields Extended; Well Opens Gas Area

Tecumseh Lake and North Davenport pools get extensions; new gas area opened in Lincoln County; Hewitt pool extended west; Guthrie field may have eastern definition.

Pottawatomie County: Stanolind Oil & Gas Co. et al's Logan 1, NEc 2-9n-3e, perf 5252-58 ft, Wilcox sand, swabbed 485 bbls oil in 10 hrs, running tubing for completion test, extends production in Tecumseh Lake pool one location south.

Lincoln County: Leader Oil Co.'s Richie 2, SE NE NE 32-15n-5e, drilled to 3571 ft in Prue sand topped at 3550 ft, hole filled with 1950 ft oil, shot 20 qts, flowing est 200 bbls oil by heads daily while cleaning out, well extends North Davenport pool to south and may indicate possible link with West Davenport pool; Skelly Oil Co.'s Kilmer 1, NW SE SE 26-17n-3e, north of Tryon, opens new gas field, test drilled 4498 ft in Wilcox sand, showed 3,500,000 cu ft on drill-stem test, perf 4444-50 ft with 13 shots, perf 47 shots 4434-44 ft, showing for est 9,000,000 cu ft daily.

Carter County: Daube Brothers' Merrick 1, NE NW SW 20-4s-2w, drilled to 2240 ft in sand topped at 2178 ft, swab and flow 278 bbls daily through tubing, well extends West Hewitt pool one location west.

Logan County: Sinclair Prairie Oil Co.'s Sult 3, SW SE NE 7-17n-1w, indicating eastern definition of Guthrie field, well drilled to 5419 ft in Wilcox sand, swabbed 151 bbls oil, 9 bbls water in 24 hrs, deepening below 5422 ft; Helmerich & Payne, Inc.'s Knox 1, SEc SW 4-15n-1e, drilled to 5637 ft in dry Wilcox sand, shut down for orders.

Kansas

Two New Fields Opened; Failure Defines Oil Zone

New strikes for Barton and Pawnee Counties; second well in new Patterson pool completed; Davidson pool extended; first failure defines new zone in Rick pool.

Barton County: Central Petroleum Co. et al's Wasinger 1, NEc SE 20-11s-18w, 4 mi west of Burnett pool, has apparently opened a new producing area, drilled to 3525 ft in Arbuckle dolomite topped at 3514 ft, test now running casing after coring 4 ft saturation.

Pawnee County: Helmerich & Payne, Inc.'s Unruh 1, CWL SW NW 18-20s-15w, opens new pool 1½ mi east of Pawnee Rock pool and 2½ mi northwest of new pool opened recently by same operators; new test drilled to 3874 ft in Arbuckle dolomite topped at 3799 ft and perforated with 50 shots, well filled 1400 ft with oil, now acidizing for completion test.

Kearny County: Stanolind Oil and Gas Co.'s Gropp 1, CWL SW SW 24-22s-38w, second well in new Patterson pool which is Kansas' farthest west production; test drilled to 4760 ft in Patterson sand and was given potential of 176 bbls daily.

Davidson Pool: H. H. Blair's Davidson 1, NEc NW 4-16s-11w, Barton County, extends pool one location west, test drilled to 3214 ft, in Arbuckle lime topped at 3195 ft, and had 1,800 ft of oil in the hole, 7-in casing 3195 ft, drilling on plug.

Rick Pool: Shell Oil Co.'s Rader 2, SW NE NE 11-19s-11w, has defined the southwest edge of new Lansing lime production in the Rick pool, Barton county, test found Arbuckle lime pay dry, plugged back, perforated 3112-17 ft, show gas only; operators opened Lansing production in pool with Rader 1, northeast of Rader 2.

North Texas

Sandy Lime Yields Big Well for James Field

Marble Falls sandy lime yields big well for James pool, Young County. Recent discoveries in Jack Montague and Young Counties make natural flows. Another Wilbarger County pool has prospective Ellenberger producer.

Young County: W. E. Production Company's B. W. King 1, C NW TE&L Sec 624, gave James pool its first prolific Marble Falls well in flowing 300 bbls oil in 2 5/6 hours ½-in tubing choke, pay 4270-95 ft, having deepened from regular Bend pay. Kerlyn Oil Co et al's E. Taylor 1, new pool opener and 1¼ miles north of

Loving, flowed 174 bbls oil 6 hours, Bend pay 4205-55 ft.

Montague County: J. A. Chapman, McFarlin et al's Fowler 1, 2½ miles east by north of Ringgold Bend production and on 5000-acre lease, flowed 121 bbls 43-gravity oil and 5 bbls water 4 hours ½-in tubing choke after being shutin to build up pressure. Production from Strawn sand 4840-47 ft, having plugged back from Ellenberger 5831-6008 ft to 4937 ft. Continental Oil Co.'s Winder 1, wildcat and 2 miles east of Stoneburg, awaiting drill stem test in conglomerate, carrying oil stain and odor, 6239-51 ft, followed by shale to 6258 ft. Entered Bend at 6039 ft, and drill stem test at 6055-78 ft, yielded gas-cut mud. Benson Bros. et al's Riley 1, wildcat and 3 miles northwest of Sunset, drilling 6290 ft in dry Bend, topped at 5745 ft.

Jack County: Taubert, McKee and Sinclair Prairie's Mary Hoefle 1, recent wildcat strike 4 miles southeast of Antelope, flowed 134 bbls oil 3 hours natural ¾-in tubing choke, saturation at 4817-35 ft in Bend, topped at 4794 ft. Sinclair Refining Co. laying 5-mile 3-in line to well, as considerable development is in store for the area if production proves consistent. P. C. Burns et al's Kemp 1, A. H. Lattimer Survey and a mile east of Mathis pool, developed hole full oil after 10-quart nitro shot in Strawn 2924-29 ft, total depth 2935 ft. Magnolia's Borden 1, Ordovician project for northeast corner county, drilling 6040 ft, entered Bend 5515 ft.

Wilbarger County: Phillips Pet Co.'s Servatius 4, NW SE SE H&TC Sec 78, Blk 14, northwest edge of Castleberry pool, cemented oil string to test broken oil saturation 4590-4600 ft and 4610-22 ft, total depth 4656 ft in Ellenberger, topped 4578 ft. Three other pools in county recorded first Ellenberger production this year, but development has not progressed sufficiently to ascertain if any appreciable area involved.

Clay County: Sinclair Prairie's Scheer 1, 1½ miles south of Henrietta, conditioning hole after drill stem test in Strawn at 4564-87 ft failed, plugged back from dry Ellenberger 6363-6459 ft. County has gained 2 new deep wildcat projects. H. L. Hunt Oil Co.'s Langford Inv. Co. 1, R. R. Brown Survey, was drilling at 1890 ft, having passed up light show oil 1472-1506 ft, and is contracted to 4000 ft. Superior Oil Co. of California located Scaling 1, SE SW NW HT&B Sec 2, 3 miles south of Halsell, and will test Bend and Ordovician.

Cooke County: Jim L. Anderson et al's Osburn 1, B. Sullivan Survey, 1½ miles northwest of the Wilson dual-pay pool, pumped 55 bbls 42-gravity oil initial after standing for period, broken sand 2309-24 ft. Kerlyn Oil Co.'s Belcher 1, south edge Wilson pool, pumped 78 bbls initial, broken sand 2220-31 ft.

Wildcat failures: Seitz-Comegys & Seitz, Inc.'s Haskins 1, eastern Knox County, abandoned 5012 ft in shale, topped Canyon 3266 ft. In Grayson County, Brown, Laves et al's Stephenson 1, ½-mile east of Collinsville, yielded 2500 ft of salt water on drill stem test at 4012-23 ft. Kimbell, Bohner and C. H. Gannon's Phillips-Herman (McGeorge) 1, J. Collingsworth Survey, east of Wilson pool, abandoned 2525 ft.

West Texas

Wildcat Test Runs High; Deep Wells Active

Yoakum County wildcat recording high structural position and prospect near east edge of county yields water. Gulf-Waddell area has big well. Crane County semi-wildcat testing Ellenberger saturation. Group of deep wildcats continue active.

Yoakum County: Sinclair Prairie's Kleiner 1, NWc Section 436 and 3½ miles northwest of Ownby sector of Waples-Platter pool, drilling 4615 ft, having topped Yates sand at 3360 ft and brown lime at 4320 ft, elevation 3630 ft, being 57 ft and 37 ft, respectively, higher on these markers than dry hole separating test from production. Honolulu Oil Corp.'s Wright 1-13, NWc Sec 13, near Terry County line, showed first water at 5261 ft, with increase at 5293 5304 ft, drilling 5360 ft.

Upper Plains Wildcats: L. C. Harrison, Foster et al's Steck 1, 3 miles west by north of Lubbock County's pumping discovery, drilling lime 4210 ft, elevation 3247 ft. In Crosby County, George Callihan and C. L. Wagner's Wahlenmaier 1, NEc W. T. Ry. Sec 3, Blk D-15, drilling 2940 ft, having passed up several nominally saturated zones. Entered San Andres lime 2117 ft, elevation 2655 ft. Phillips Pet. Co.'s Montague 1, Briscoe County 6500-foot project, drilling lime and anhydrite 4240 ft.

Crane County: Continental Oil Co.'s Jones 1, 1½ miles south of Ellenberger production in Sand Hills field, awaiting drill stem test at 6146 ft in Ellenberger, topped at 6045 ft, elevation 2474 ft. Jones 1 passed up 75 bbls producer in Simpson 5720-40 ft and 5905-21 ft, and is 487 ft low on Ellenberger marker.

Deep Prospects: Magnolia's Walton-State 20, Winkler County, drilling chert 8437 ft, advancing only 17 ft the past week. Plymouth Oil Co.'s Alford 1, eastern Upton County, drilling chert 10,055 ft, adding only 27 ft new hole the same period. In southern Mitchell County, Humble's Ellwood 1, drilling shaly-lime 7435 ft in lower Pennsylvanian. Shell's Sealy-Smith 1, northeastern Ward County, drilling 6690 ft.

Gulf-Waddell Field: Gulf's Waddell 46, SW NE SE PSL Sec 11, near east edge but within productive limits, lacked sufficient porosity to make commercial producer, and abandoned after drilling to water at 3671-81 ft. Company's Henderson 28, southwest edge of field, earned potential rating 9024 bbls 35-gravity oil, gas-oil ratio 481/1, used 5000 gals acid 3510 ft.

Pecos County: Anderson-Prichard Oil Corp. et al's Boren 2, ¼-mile south of production in South Apco pool, plugged back from granite at 4858 ft to 4370 ft to test Basal Permian, having logged dry Ellenberger 4737-44 ft, elevation 2471 ft. Partnership's Boren 3, ¼-mile west of latter, cemented 5½-in 4738 ft to test broken saturation in Ellenberger 4740-4850 ft, followed by granite 4890-4956 ft, elevation 2468 ft. Gulf and L. H. Wentz's Millar 2, second test on a geophysical prospect, drilling 2150 ft. Pure's T. P. Land Trust 1-A, western Pecos County Delaware project, drilling 4455 ft.

East Texas

Well Completed in Deep Area in Rodessa Zone

Willow Springs gas-distillate pool records first completion from Rodessa zone.

Gregg County: Roger Lacy et al's Horton-Dickson 1, J. L. T. Meredith Survey, is the first completion for the Willow Springs deep area in the Rodessa zone, having tested 60,000,000 ft of gas, yielding 13 bbls distillate per million ft gas, after acidizing perforations 6490-6770 ft opopsite Rodessa zone, topped 6450 ft, elevation 268 ft. This outpost yielded oil, gas and water on a series of tests in the regular Pettit pay, involving 4 porous zones between 7131 ft and 7296 ft.

Freestone County: Amerada's Berk 14, southwest extension for the Cayuga deep pay, rated at 15,000,000 ft gas daily, with 5 bbls distillate per million ft gas, on unofficial gauge, acidized Rodessa saturation through perforations 7430-7614 ft.

Chapel Hill: Sinclair Prairie's Carithers 1, southwest edge of gas-distillate production, drilling 6100 ft, logged Paluxy sand 5975-6020 ft, elevation 503 ft. Sun Oil Co. has 2 drilling tests and Shell has 2 additional tests authorized. Chapel Hill Gas System's Walton 1, north edge production, logged first Pettit porosity 8069 ft, drilling 8225 ft. The field produced an average of 500 bbls 43-gravity crude daily from 11 wells and 776 bbls 63-gravity distillate daily from 8 gas-distillate wells during September. Sharp gain in distillate production is due as result of Delta Drilling Company having provided a natural gas outlet in the East Texas field to enable it to produce its prolific wet-gasser from the Paluxy zone on the Walton-Shell lease.

Southwest Texas

New Producing Areas Indicated in 4 Counties

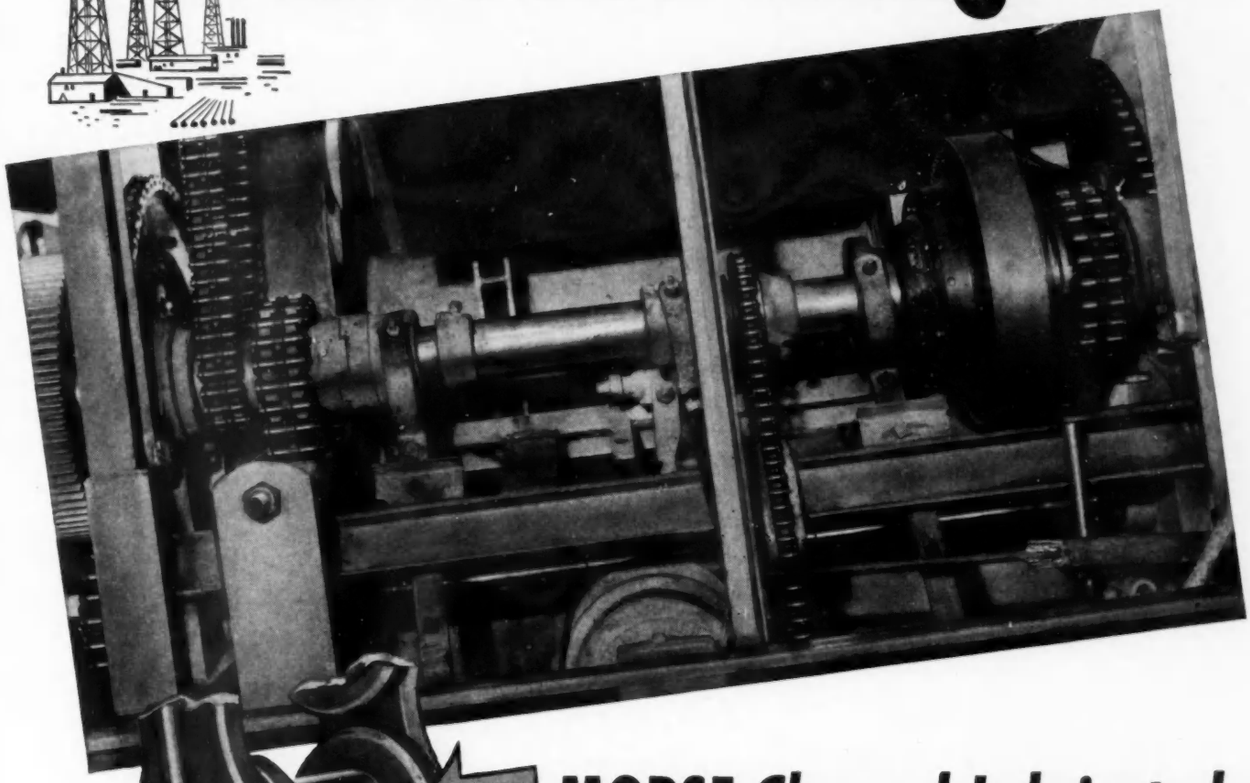
New producing areas considered probable in Guadalupe, Starr, San Patricio and Duval Counties as tests in final stages. Field extensions reported from scattered areas along lower Gulf Coast.

Lower Gulf Coast: Fred W. Shield's J. M. Clemons 1, IGN sur, ab 174, 3 mi nw Mathis, San Patricio County, top Vicksburg sd 4689 ft, dst 4689-95 ft rec 5 gals dist, no w, 475 lbs ¼ and ¼ ch, 11 min, BHP 1310 lbs open, 2300 lbs si; dst 4694-4704½ ft rec 45 ft oily m, 15 ft 41.2 gr brn o, 2½ lbs wp, ¼ and ¼ ch, 10 min, BHP 100 lbs open, 250 lbs si; dst 4706-17 ft rec 1 jt oily m, no pressure, ¼ and ¼ ch 25 min, dr to 4900 ft cont, ran elec log, woo. May pb to test. Would open field.

Standard of Texas' Hocker 1, 1 mi nw Palo Blanco fld, Brooks County, abd 5513 ft, test sw thru perf.

Humble's C. C. Bonnet 1, blk 14, westermost well Maubro fld, Jackson County, comp 5242 ft 102 bpd 25.2 gr o, 1/10% sw ⅛ ch, 450 lbs tp, 650 lbs cp, sd 5230-42 ft. Minor extension but in direction North LaWard fld, disc earlier in month. Play now extends along

OIL is the thing....



MORSE *Channel Lubricated* ROLLER CHAINS reduce wear

To assure continuous production, specify Morse, the Roller Chain with a "force-feed" lubrication system in every link. Channels in the bushings lead oil through the side plates down to the pin and bushing surfaces. This exclusive design eliminates common chain failures due to insufficient lubrication. Morse Channel Lubricated Roller Chains have proven their superior performance under the most gruelling conditions on drilling rigs throughout the country. Regardless of drilling depths, speeds, severe shocks and exposed conditions, Morse Long-Life Roller Chains will keep your rigs producing longer, more efficiently, and at less cost. They are interchangeable with other roller chains, all standard sizes available, single and multiple widths. Investigate now!

Houston Office—1418 Polk Ave., Houston, Texas

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS CLUTCHES

MORSE *positive* DRIVES

MORSE CHAIN COMPANY ITHACA N. Y. DIVISION BORG-WARNER CORP.

trend from Maubro five miles sw thru 2 Marginulina sd wildcat producers.

Gust Tsesmelis' P. S. Joseph 1, Sec 9, 2½ mi s Camada fld, Jim Wells County, ran elec log 6012 ft, took side wall cores, sd oo 4780-95 ft, dr ahead to 6500 ft, may pb for test if lower snds fail.

Simmons Oil Co.'s Kline 1, w of S. White Crk fld, Live Oak County, comp perf 1816-20 flwed 110 bpd 20.4 gr o plus 23% sw 9/32 ch, 50 lbs tp, 320 lbs cp. Disc well making 2% sw.

Simmons Oil Co.'s Reagan 4-C, Oakville fld, Live Oak County, testing 1960 ft, upper part sd showed g, would extend 2000-ft snd 1 mi w.

G. B. Buescher et al's J. K. Knight 1-A, n offset deep disc N. Luby fld, Nueces County, sq perf in 6900 ft snd, bad cement job, prep to reperf sd by elec log 6940-70 ft. Broken snd with oo, sw in lower part 7320-65 ft.

Seaboard Oil Corp.'s C. C. Parker 1, s end Odem fld, San Patricio County, abd 6948 ft on downthrown side fault, show sw in fld sd.

Wellington Oil Co.'s Welder 3-B, sq all perf, td 6985 ft. Attempting to open prod on downthrown side fault.

Balcones Fault Zone: Dees & Freeland's Day 3, Day fld, Guadalupe County, top Edwards lime 2787 ft, core 2797-2800 ft good odor and show, swabbing. Would open Edwards prod in Austin chalk fld. Well checked abt 375 ft higher than downthrown well 1 lcn west.

Fred W. Weigand's S. B. Owen 1, 1 mi ne Tenney Crk, Caldwell County, low on Ed lime, abd 2950 ft.

Chittim Anticline: Wellington Oil Co.'s D. J. Sullivan 1-B, sur 602, Dimmitt County, 12 mi nw Carrizo Spgs, sd 1087-93 ft, dst 1087-90 ft rec no fluid, 175 lbs ¼ and ⅜ ch 25 min, dr ahead.

Humble's J. E. Bishop 1, ACH & B sur 11, 6 mi nw Cotulla. LaSalle County, prep to mi for 9000 ft Edwards lime test on important geophysical prospect.

Wilcox Trend: Quintana Pet. Co.'s Washburn Ranch 1-B, 6265 ft sw Washburn fld, LaSalle County, rec 1000 lbs dry gas 10 min in 4800 ft Wilcox sd, crg for 5400 ft sd.

Shell's McManus 1, Brushy Crk pros, Lavaca County, reperf and testing. Several previous tests show o and g. Would open fld.

Texas Gulf Coast

Deepest Well on Upper Gulf Coast Makes Test

Production test scheduled in deepest well ever drilled on upper Gulf Coast; deep test projected on prospect in Austin County; wildcat in Brazoria County makes production tests.

Wilcox Trend: Superior Oil Co. is making first test in McWhorter 1-B, 13,300-ft wildcat at Lake Creek, Montgomery County, deepest well on upper Gulf Coast and deepest drilled in Wilcox in Texas. Wilcox topped around 8453 ft, reports crediting well with approximately 1021 ft oil, gas and distillate sands between top Wilcox and bottom of hole. String of 2445 ft of 4¾ in liner was set at 10,330 ft; 7-inch previously set at 11,012.

Atlantic's Foster Lumber Company 1-A, eastern part Montgomery County, drilling around 11,398 ft in Wilcox. Well is going deep in Wilcox with protection pipe cemented at 8636 ft.

Tyler County: Two wildcats showing for field openers. Stanolind's Parker 1, Fred area, coring and drilling after recovering 1000 ft oil and 85 pounds pressure on drill-stem test at 8184-8201 ft in top Wilcox; contract depth 8500 ft. Republic & Houston's Smith Fee 1, west of Joe's Lake field, drilling after showing oil and water on test at 7688-99 ft. Test made in regular Joe's Lake pay.

Brazoria County: Humble's Houston Farms Development 1, Rattlesnake Mound area, failed to show oil or gas through perforations 7223-25 ft. Two other sands remain to be tested, 7165 and 6800 ft.

Austin County: Shell is preparing to drill John F. Hintz 1, Wilcox test west of Sealy, located 990 ft out of nw cor of sec 180, George T. Allen sur. Well is attracting interest as it proposes deepest hole ever drilled in area and will test Wilcox.

South Louisiana

Deep Wells at Erath And Neale Are Testing

Deep wells at Erath and Neale make production tests; surface casing set in East Baton Rouge wildcat; wildcat projected in LaFourche Parish.

Vermilion Parish: Texas Co.'s R. S. Henry 1, Erath field, testing in third sand at 10,450 ft after establishing production at 8500 ft and 8700 ft. Texas Co.'s Henry 1-B, 1½ mi sw of production, is drilling near 12,000 ft.

Beauregard Parish: Atlantic Rice Land & Lumber Co.'s B-3, Neale field, has set casing to test, total depth 11,200 ft. Well is deep in Wilcox sand.

East Baton Rouge Parish: Texas Progress Oil Co. has set 2817 ft surface casing in Nelson 1, Longwood area, projected to 10,000 ft, deep test for area.

LaFourche Parish: Ernest Cockrell of Houston is moving materials to drill LaFourche Land 1, 7500 ft wildcat in North Cutoff area. Location is 100 ft n of first well and 100 ft w and 200 ft n of SEc NW NW 32-18s-22e, 7 mi e of Golden Meadow field. Housh & Thompson are contractors.

Iberville Parish: Humble's E. B. Schwing et al is new location in Bayou des Glaise area, 1250 ft n and little w of Schwing 1-B abandoned at 10,380 ft. Location is 1 mi s of discovery which flowed some oil but was abandoned later.

North Louisiana

LaSalle Parish Wildcat Produces Claiborne Gas

Shallow wildcat completed in LaSalle Parish; Winn Parish salt domes being explored. Nebo leads drilling activity in Wilcox fields.

LaSalle Parish: Six miles south of production at Little Creek, LaSalle Parish, Delta Drilling Co.'s Hughes 1, NE SW 22-8n-1e, completed in Claiborne at 1462-65 ft making 10 million ft gas daily; plugged back from 4092 ft.

Winn Parish: Long-known salt domes in Winn Parish are causing considerable geophysical activity in wake of widespread leasing and wildcat drilling in that parish.

Arkansas

Ouachita County Wildcat Shows Oil in Nacatoch

East side test at Dorcheat shows salt water; Nacatoch sand shows oil in shallow wildcat in Ouachita County; Smackover lime wildcat staked.

Dorcheat: Southwood Oil Co.'s Hunt 2, SE NW 14-18-22, east side test at Dorcheat, Columbia County, showed salt water in Smackover at 8897-8903 ft, plugged back for another test; elevation 265 ft, top Smackover lime 8820 ft, top porosity 8821 ft.

Wildcat Shows Oil: Lee Bergman's Cook 2, NW SW 27-15-18, Ouachita County wildcat, six miles from Stephens, bailed oil in Nacatoch at 1620 ft, had 1200 ft fluid in hole, no salt water, indicates commercial well.

Mississippi

Mississippi Wildcat Has Heavy Oil Show in Wilcox

Mississippi wildcat shows heavy oil in Wilcox. Deep wildcat in Alabama abandoned.

Wildcat Shows Oil: Indicative that the Wilcox carries producing possibilities in Mississippi was showing of 10-gravity asphaltic oil in Magnolia Petroleum Co.'s Hall 1, NE NW NE 39-17n-4e, Warren County, five miles northeast of Vicksburg, which showed 320 ft of mud and 10-gravity oil in drill-stem test from 3 ft of sand in core 2202-12 ft. Importance is that Wilcox "Olla trend" appears to extend into Mississippi. Location 28 miles southwest of Tinsley Dome.

Oil in Eutaw: Sinclair-Wyoming Oil Co.'s McGraw 1, SW NW 36-11n-3w, in north offshoot Tinsley Dome, flowed 380 bbls 47.8 oil in 7½ hours after swabbing, total depth 5868 ft, producing from basal Eutaw (Blossom) after perforating at 1820-30 ft.

Alabama: After setting depth record for Southeastern States, Union Producing Co. abandoned Waite 1, C NW 27-8n-1w, Clarke County, Alabama, on Hatchetigbee Anticline, at 12,399 ft. E. O. Heath et al's Cambron 1, SE SE 35-5s-6e, Madison County wildcat, that swabbed seven gallons of oil per hour at 280 ft, acidized, seat gave way and test now shut down.

California

West Extension Prospects Good at Raisin City

Favorable indications for westerly extension Fresno County, Raisin City area. New test slated for Anaheim area, Orange County, while Seal Beach wildcat may be abandoned. Turnbull Canyon, Los Angeles County test making oil.

Fresno County: Seaboard Oil Corp. while having trouble controlling sand situation in STU 88-13, westerly extension test in Sec 13-15-17, Raisin City area, reports flow by heads. Production is from interval 5122 ft to bottom at 5138 ft.

Orange County: Location has been

staked by The Texas Co. for Spencer 1, wildcat in Sec. 1-4-11, Anaheim area, where 5000 acres have been leased surrounding location. In Sec. 8-4-10, same area, company's A-13-1 wildcat was taken to 8977 ft and abandoned although showings were encountered at 7800, 7900, and at 8240 ft, which tested wet.

In northeast Seal Beach area, South Basin Oil Co.'s SBJA 1, wildcat, Sec. 6-5-11, has been bottomed at 8013 ft. Logging device was run and well may be abandoned as no showings were encountered in equivalent of Dixby zone at Seal Beach field topped at 6980 ft.

Los Angeles County: Turnbull Canyon wildcat of Continental Oil Co., Comm. 1, Sec. 13-2-11, bottomed at 3447 ft on pumping test made 182 bbls daily, 25.2-gravity oil, cutting 4.1 percent.

Ventura County: Western Gulf Oil Co. is abandoning Rubel 1, wildcat in East Piru - Camulos Ranch area in Rancho San Francisco, bottomed at 7096 ft, in sandy shale. Well showed steep dips in lower portion and did not encounter any showings of importance.

Michigan

Reed City Gets 63rd Well As Basin Work Booms

Sixty-third producer completed in Reed City, Osceola County, field as new starts and prospective locations give state its best basin play since 1937.

Reed City: Gulf Refining Co. completed Bolger 1, C S½ SE NE 24-18n-11w, Pinora Township, Lake County, for 145 bbls per day from Traverse lime after perforating with 50 shots between 3000 and 3010 ft, and acidizing. Monroe lime failed to produce after two acid treatments. Well is half mile northwest of closest producer in field and indicates west flank of structure may produce from Traverse although Monroe prospects are poor.

Pure Oil Co. has contracted an all-way rotary well to the Twin Drilling Co. on Reber 1, C S NE NW 32-18n-10w, Reed City, with program calling for elimination of the 8-inch Marshall casing string, normally cemented at 1500 to 1700 ft. It will be the first well in the state to be carried to 3500 ft without setting of a casing string through the Marshall. If successful it may greatly increase the use of rotary for all-way drilling in Reed City, where combination work now dominates.

Wildcats: Ohio Oil Co.'s Peiser 1, Section 6-18n-11w, Lake County, seven miles northwest of Reed City, which carried oil saturation at 3637 ft in the Monroe but also showed water when bottomed at 3666 ft, is being abandoned. Attempts to plug back and eliminate water also shut off pay.

Sun Oil Co.'s Bauman 1, Section 29-24n-1w, Roscommon County, showing oil through a hole full of water at 4188 ft, probably the Monroe lime, was still held up with a fishing job.

Rocky Mountain Area

Important Wildcats Start In Colorado and Wyoming

Three important wildcat first reports are released in Colorado and Wyoming as Rocky Mountain search for new fields takes on added impetus.

Eastern Colorado: Direct result of its Patterson pool, western Kansas, discovery, Stanolind Oil & Gas Co. is moving in rotary for Snell 1, C SE SW 7-20s-41w, on its 7000-acre South Tower block, covering seismic high, 2 mi west Kansas line, Kiowa County, Colorado. Objective will be the Cherokee, basal Pennsylvanian. Stanolind's Patterson discovery completed for 88 b/d 4740-60 Cherokee. Magnolia Petroleum Co. holds 1000 acres South Tower area, The Texas Co. 400. Stanolind holds substantial acreage blocks Tower area to north, and along trend south from test.

Routt County: Elk River Oil Co. is completing rigging after spudding May 1, C SE SW 34-8n-86w, Elk River Dome, Chimney Rock uplift, northwestern Colorado, objective Sundance at 2600 ft. Two tests drilled several years ago immediately south of new location developed from 2 to 4 million ft wet gas in Frontier at 860-70 ft. Frontier to 1717 ft deepest tested Elk River.

South Lance Creek: On a 10,000-acre spread, Cow Gulch Oil Co. dr 300 ft Nelson 1, C SE SW 19-35n-65w, 2 miles south nearest producer, Lance Creek field, Niobrara County, Wyoming. Contract let to Manning & Martin, Inc., calls for 5600 ft or 50 ft in Joss sand (basal Leo) by December 31. Three wells drilled in vicinity of Cow Gulch location, none to conclusive depth, deepest through Sundance, 5 ft in Red Beds, bottomed 4615 ft.

Cole Creek: Another extension appears for Cole Creek field, Natrona County, Wyoming, General Petroleum Corp.'s 75-17-G (Gov't), NW NE SE 17-35n-77w, ½ mi northeast outpost, coring saturation top of Shannon 4609 ft, td 4640 ft.

Nebraska

Second Well in New Field Makes Producer

Second well in new pool completed for major producer; Nemaha County wildcat encounters water in Hunton lime; Lancaster test is dry.

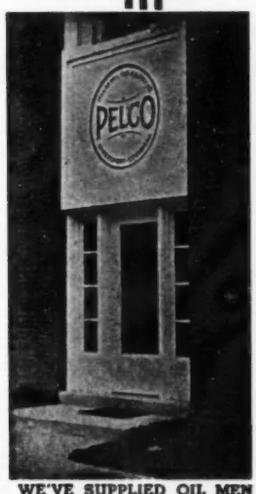
Richardson County: Frank Power et al's Albin 2, SEc 9-1n-14e, second well in new pool south of Dawson, perf 2300-08 ft in Hunton lime topped at 2218 ft, swabbed oil and water, reperforated nearer top and was swabbing 600 bbls daily, no water; Skelly Oil Co.'s Roesch 2, C S½ NW 36-3n-16e, offsets first producer in new pool 8 mi north of Falls City, drilling 2000 ft; operator's Roesch 3, C W½ SW NW SEc. 36, running surface casing; pool opener pumping 615 bbls oil daily.

Nemaha County: Continental Petroleum Company of Nebraska's Gauchart 1, SW NW NE 26-6n-13e, drilled to 2127 ft in Hunton lime topped at 2031 ft, hole filled with salt water, shut down for orders.

Lancaster County: August Kreger's Roe 1, NE SE SW 5-7n-7e, drilled to 1779 ft in dry Viola lime, abandoned.

Mulligan Stew

The OPM insists that substitutes for "critical" materials be used when possible. If necessity demands that you beat your plowshare into a set shoe, so to speak, maybe we can help. We have the shop and the men, versed for 33 years in the fine art of cooking up things for customers. Perhaps you'd like a mulligan, seasoned with a dash of ingenuity and a pinch of enthusiasm, stirred well and stewed interminably over a fire stoked with priorities.



WE'VE SUPPLIED OIL MEN IN OUR AREA FOR 33 YEARS

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO

Houston
Berwick
Houma
New Iberia

UNITED STATES WELL COMPLETIONS

Company, Well and Location	Init. Prod. Bbls.	Depth

Arkansas

Columbia County (Stephens)—
Grady Vaughn, Smart 2, 13-15-20.. 125 3455
Smart 1, 13-15-20 ..... 54 3503
Crow Drlg. Co., Smart 1, 12-15-20 200 3398
Fitzwater & Carpenter, Smart 1, 14-15-20 ..... * 3485
Clark County (Wildcat)—
Coker Oil Co., Cabe 1, 25-10-19.... * 712
McMillan & Cane 1, 34-10-19 .... * 1425
LaFayette County (McKamie)—
Carter, Cornelius 2, 31-17-23..... 217 9356
Miller County (Fouke)—
H. L. Hunt, Fouke 1, 34-16-27.... * 3889
K. E. Jennings, Sturgis 1, 12-17-27 * 3817
Nevada County (Wildcat)—
Coker Oil Co., DeWoody 1, 23-11-20 * 1900
Ouachita County (Smackover)—
Bob Milam, Fincher 1, 32-15-16... 58 2524

Alabama

Clarke County (Wildcat)—
Union Prod. Co., Waite 1, 27-8n-1w * 12399
Madison County (Wildcat)—
Mellen & Thompson, Baldridge 1, 8-1s-1e ..... * 1172

California

Fresno County (Jacalitos Hills)—
Wilshire Annex Oil Co., No. 33-26E (pb 3960)..... 100 6031
Fresno County (Coalinga Northeast)—
Superior, Husong 7 .....2020 9155
Kern County (Coles Levee)—
Richfield, KCL B-27 9195
KCL A27-28 .....1200 9155
Union, Kernco 56-2 ..... * 10101
Kern County (Edison)—
Monterey Exp. Corp., Brown 6.... 40 3308
Kern County (Fruitvale)—
Rancho Oil Co., Dixon 1..... 225 3308
Kern County (Greeley)—
General, Oughton 5 .....1069 11490
Kern County (Kern Front)—
General, Young 8 ..... 38 2086
Kern County (Mount Poso)—
Shell, Vedder-Rail 18 ..... 98 2015
Texas, Glide 2-8 ..... 140 1701
Kern County (Ten Sections)—
Shell, KCL A-44-29 ..... 326 8235

Los Angeles County (Coyote West)—
Texas, McNally A-1 ..... * 9000
Los Angeles County (Inglewood)—
Jergins Oil Co., Howard 2..... 850 8423
Los Angeles County (Long Beach)—
Apex Pet. Co., Kirkpatrick 28.... 5 3652
Los Angeles County (Puente Hills)—
L. B. Altschuler, Larry 1..... * 1255
Los Angeles County (Wilmington)—
Continental Dev. Corp., LACFCD 26 135 3460
First National Finance Corp., Capital 2 ..... 140 3715
General, Seaside 1 ..... 471 3900
George F. Getty, W. 9 ..... * 3352
Union Pacific, UP 204 ..... 369 2830
Santa Barbara County (Santa Maria Valley)—
Union, Fleisher 2 4897
Ventura County (Piru Area)—
Glen Ogles Oil Co., Lisk 1..... * 1791
Ventura County (Ventura Avenue)—
Shell, Taylor 105 ..... 507 7275
OLD WELL DEEPENED
Ventura County (Ventura Avenue)—
Tide Water, VL & W 5 (otd 5880) 221 7082

Illinois

Bond County—
Fox & Conroy, Elain 1, sw nw ne 11-4n-2w ..... * 1264
Cass County—
E. J. Brown, Stribling 1, sw se sw 9-17n-8w ..... * 501
Clark County—
Geo. Haley, Christian 1, ne ne nw 19-11n-14w ..... * 292
Clay County—
Glenn Scott, Rodgers 1, ne nw nw 37-4n-7e 20 2319
Carl Robinson, Coggan 1, sw sw sw 17-4n-8e ..... * 3021
Fayette County—
Carter, Miller 2, c sw se se 9-8n-3e 78 1523
Beck 3-D, c ne sw 21-8n-3e..... 250 3054
Hogan 6-D, c sw se 21-8n-3e.... 250 3016
Presby. Church 5-D, c e½ se ne 21-8n-3e 100 3161
Tipsword 3-D, c w½ sw nw 22-8n-3e 200 3127
Weaber-Horn 3-D, c ne nw 28-8n-3e 250 3036
Marshall 5-D, c se nw 28-8n-3e.. 250 3043
Marshall 6-D, c ne sw 28-8n-3e.. 250 3107
Watson 5, nw ne sw 33-8n-3e.... 216 1584
Lutrell, Buzzard 2, e½ e½ ne se 34-9n-3e 39 1532
Franklin County—
F. McQuigg, Old Ben Coal Co. 1, ne se nw 5-6s-2e ..... * 2988
Oil Carriers Inc., Casper 1, se sw nw 1-6s-2e 240 2623
Wayman 1, se nw sw 1-6s-2e.... 70 2963
J. H. Gilliam, Walker 4, nw se ne 23-6s-2e 110 2116
Hamilton County—
Schoenfelt et al, Hamilton 1, nw nw se 13-6s-5e 1359 3371
Texas, Lockwood 4, se sw nw 13-6s-5e 1381 3285
Turner 2, ne nw nw 11-6s-6e.... 35 3068
Smokey Oil Co., Cluck 1, ne sw sw 18-6s-6e ..... * 3342
Pure Oil Co., Cuppy 18, se nw sw 6-6s-7e 444 3004
Shell, Beagle 1-A, nw sw se 6-6s-7e 100 2996
Morris 1, ne ne nw 18-6s-7e..... 30 3055
Jefferson County—
Longhorn Oil Co., Severs 1, s½ se se 26-2s-3e ..... * 3061
Gulf, Blankenship 1, ne sw nw 1-3s-1e 285 1948
Nation Oil Co., Piper 5, nw ne nw 1-3s-1e 480 1971
Texas, Schmitt 2, sw sw nw 1-3s-1e 210 1930
Robinson 2, se se nw 1-3s-1e.... * 2010
Walker 3, ne se nw 2-3s-1e..... 70 1968
Balir, H. H. et al, Smith 1, nw se nw 11-3s-1e ..... * 2439
Lawrence County—
Stacker & Kieffer, Rogers 1, nw se sw 17-2n-12w ..... * 2361
Marion County—
Roy Dodd, Stater 1, se sw nw 9-1n-1e ..... * 2064
Ohio, M. Yongg Hrs. 53, c se sw 20-2n-2e .....Input 1873.
Perry County—
Byers, McIntyre 1, ne se sw 36-6s-3w ..... * 1792
Randolph County—
Gen. Oil & Synd., Scknoell 1, se se ne sw 27-4s-7w ..... * 105
Richland County—
Kraft & Powers, Whitaker 1, e½ sw se 8-2n-14w ..... * 3084
Sinclair-Wyoming, Baley 1, e½ nw ne 8-2n-14w 5 3145

*Failures; †Junked; ‡Million cu. ft. gas.

Summary of Drilling Operations in the United States, Week Ended October 25, 1941

	WELLS COMPLETED								[1]PERMITS FOR NEW WELLS				
	Total for Week	New Wells Drilled for Oil and Gas: Oil Wells	Gas Wells	Failures	[3]Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Alabama	2	.....	.....	2	.....	.....	4	8	.....	.....	.....	.....	.....
Arkansas	11	5	.....	6	.....	654	155	157	5	18	155	128	153
California	25	20	.....	5	.....	7,954	962	930	25	89	973	864	1,042
Colorado	.....	.....	.....	.....	.....	.....	15	7	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Illinois	85	56	.....	23	6	19,678	3,245	3,339	97	406	3,947	3,803	4,532
Indiana	9	3	2	3	1	396	440	403	10	57	[2]216	.....	.....
Iowa	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Kansas	39	18	4	15	2	19,773	1,870	1,660	41	208	1,945	1,698	2,048
Kentucky	.....	.....	.....	.....	.....	.....	267	298	11	38	[2]150	.....	.....
Louisiana	56	41	2	13	.....	5,798	1,281	1,407	32	145	1,456	1,393	1,658
Michigan	15	10	1	4	.....	25,230	693	1,012	26	110	765	951	1,093
Mississippi	9	7	.....	2	.....	3,060	175	153	.....	.....	.....	.....	.....
[1]Missouri	.....	.....	.....	.....	.....	.....	62	25	.....	.....	9	19	26
Montana	12	6	3	3	.....	643	182	162	.....	.....	.....	.....	.....
[1]Nebraska	.....	.....	.....	.....	.....	.....	76	20	.....	.....	.....	.....	.....
New Mexico	9	5	2	2	.....	537	317	546	10	30	337	490	559
New York	30	15	.....	.....	15	119	819	834	.....	.....	.....	.....	.....
Ohio	45	14	23	8	.....	576	1,449	845	.....	.....	.....	.....	.....
Oklahoma	38	23	2	11	2	6,780	1,825	1,757	45	228	1,934	1,498	1,888
Pennsylvania	53	37	6	3	7	57	3,229	2,996	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	16	8	.....	.....	.....	.....	.....
Texas	211	147	9	52	3	88,047	8,578	8,297	313	892	10,080	9,350	11,170
Utah	.....	.....	.....	.....	.....	.....	3	3	.....	.....	.....	.....	.....
West Virginia	23	3	16	4	.....	134	597	487	.....	.....	163	663	782
Wyoming	1	1	.....	.....	.....	170	114	133	.....	.....	.....	1	1
Total this week	673	411	70	156	36	179,606	26,381	25,490	615	2,277	22,218	20,901	25,021
Total last week	662	403	74	134	51	212,441	25,708	24,946	453	1,608	21,599	20,487	25,021
Total this year	26,381	16,075	2,041	5,757	2,508	7,339,769	.....	.....	.....	.....	.....	.....	.....

[1] This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
[2] No data available before June 14, 1941.
[3] Includes old wells deepened, water-intake, gas input, and salt water disposal wells.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Nelson Dev. Co., Evans 1, c w½ nw se 29-2n-14w	•	3133
Sinclair, Clodfelter 4, s½ nw sw 29-2n-14w	858	3135
Wabash County—		
W. O. Allen, Baird 1, sw sw se 30-1n-13w	•	2939
Joe Young, Fox 9, se se ne 1-1n-12w	20	2036
Washington County—		
A. J. Colgan, Meyers 1, ne ne se 26-2s-5w	•	1230
Wayne County—		
T. Blake Dirickson et al, Greer 1, c n½ nw se 24-1s-5e	•	3240
Olsen Drilling Co., Eikleberry 2, e½ se ne 1-1s-6e	•	3336
Carter Oil, Matchett 2, c n½ sw ne 27-1n-6e	3150	3090
Pure, Harrington "B" 2, w½ sw nw 12-1n-7e	366	3083
Texas, Brinberry 1, n½ nw se 22-1n-6e	273	3213
Greathouse 2, n½ se nw 27-1n-6e	385	3118
Greathouse 3, s½ ne nw 27-1n-6e	813	3135
Schultz 2, n½ se ne 28-1n-6e	250	3178
Leathers 9, n½ nw se 28-1n-6e	75	3197
Leathers 10, c n½ sw se 28-1n-6e	90	3208
Leathers 11, c s½ nw se 28-1n-6e	123	3190
United Prod. Co., Hilliard 1, s½ nw nw 26-1n-6e	1636	3162
Hilliard 2, n½ nw nw 26-1n-6e	1306	3200
Cariens 3, s½ nw se 34-1n-6e	90	3255
Schell 2, n½ sw nw 35-1n-6e	350	3196
Watson 3, s½ ne ne 35-1n-6e	•	3270
Shell, McReynolds 1, s½ sw se 28-1n-6e	261	3225
Wilson 2, n½ ne se 33-1n-6e	458	3200
White County—		
1st Nat'l Pet., Hon 6, nw nw sw 33-3s-14w	80	2839
Imperial O&G, Hubele 1, c s½ nw nw 15-5s-9e	•	3460
Hudson-Hess, Poorman 2, ne sw ne 30-3s-8e	312	3233
Sun Oil Co., Greathouse 36, nw se se 33-4s-14w	200	2673
Superior, Fitton 28, sw nw nw 27-4s-14w	50	2860
Givens 15, s½ ne se 33-4s-14w	100	2723
Ford "D" 14, se ne nw 34-4s-14w	30	2953
Annin, Dabney 1, nw se se 23-6s-8e	•	3138
Shulman Bros., Porter 5, ne nw nw 18-6s-9e	18	3118
Cherry, Kidd & Lambert, Karch 3, ne sw se 13-6s-10e	3	2874
Skelly, Karch "B" 3, se ne se 13-6s-10e	38	2030
Magnolia, Sisson-Higgins 8, se nw se 24-6s-10e	50	2270
Ryan Oil, Hubele 1, sw sw sw 7-6s-11e	•	2877
Carter Oil, Hamilton 1, sw nw ne 11-7s-8e	227	2223
McGill 2, nw nw nw 14-7s-8e	325	2922
Hamilton 5, c ne 11-7s-8e	334	2255
McGill 3, sw nw nw 14-7s-8e	350	2919
OLD WELLS DEEPENED		
Gallatin County—		
Delta Drlg., Doherty 1, w½ e½ nw 24-8s-9e (otd 1995)	•	2941
LaSalle County—		
O. L. Greer, Davis 1, sw sw sw 23-35n-2e (otd 986)	•	1045
Marion County—		
Texas Co., Chapman 21, ne nw sw 28-2n-2e (otd 3475)	•	4665
Magnolia, J. H. Young 99, ne sw nw 28-2n-2e (otd 3507)	60	4680
Wayne County—		
Gulf, Rosa "A" 1, c n½ se ne 33-1n-6e (otd 3150)	275	3207

Indiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
R. D. Brown, Inc., McCracken 4, s½ nw ne 21-2n-6w	¶.681	735
Gibson County—		
Continental Oil, Bozeman Land 51, c se sw sw 23-3s-14w	225	2162
Brians & Wheelock, Kleiderer 4, se sw se 28-3s-14w	125	2800
W. C. McBride, Inc., Blood 7, ne se sw se 28-3s-14w	46	2188
Sullivan County—		
O. A. Thayer, Grobow 1, c sw se 6-7n-9w	•	827
Wilkie 1, c ne nw 7-7n-9w	•	1194
Wilkie 2, ne nw 7-7n-9w	¶1.3	601
Trio Drlg., Huff 1-A, s½ se ne ne 34-8n-10w	•	829
OLD WELL DEEPENED		
Knox County—		
Naomi O&G, Walden 2, 261-5n-10w (otd 150)	•	790

Kansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton County—		
Stanolind, Kultgen 3, c n l nw se ne 26-16s-13w	3000	3392
Continental, Herrington 1, ne se se 29-16s-13w	366	3402
General Exploration et al, Hammeke 1B, c e½ ne sw 12-18s-12w	•	3456
Shell, Kowalsky 5, ne sw se 18-20s-11w	2629	3300
Helmerich & Payne, Schultz 1, c e½ ne ne 8-20s-15w	•	4006
Schmidt 1, c e½ se nw 22-20s-15w	18	3762
Butler County—		
Rex-Morris, DeMoss "AA" 9, c e½ sw sw 5-28s-7e	35	2745
Cowley County—		
E. B. Shawver, Shawver 8, nw se se 3-30s-4e	•	2855
Baird "B" n nw se se 17-34s-3e	•	3395
Leader & Zephyr, Moon 9, sw ne sw 16-32s-5e	403	3084
Ellsworth County—		
Anderson-Prichard et al, Kozisek 1, c e½ sw se 16-16s-10w	•	3422
Greenwood County—		
Eldorado Ref., Noeler 1, sw se ne 9-23s-9e	•	2742
R. P. Moulter, Ledgerwood 1, nw se nw 36-27s-8e	50	2729
Marion County—		
Ben Biggs, Cropp Jr. 1, sw sw sw 8-19s-4e	•	2421
Nebraska-Wyo., Robinson 1, sw sw nw 15-20s-5e (pb 2079)	¶1.0	2085
Pawnee County—		
Helmerich & Payne, Wilson 1, ne ne se 26-21s-17w	•	4032

[*Continued on next page*]

For 22 years it has been our job to cooperate with experienced producers. The important thing has been what they wanted — not what we thought they ought to have. As a result, JENSEN Pumping Units have come to be the symbol of better management and more profitable production everywhere.

HEARD ANYTHING LATELY?

Few producers go out of their way to volunteer information when they hit on a good way to save money and avoid aggravations. You've got to ask 'em.

Now we are not the world's largest exclusive manufacturer of pumping equipment by accident, so if you haven't heard anything lately from men using JENSEN JACKS, ask 'em! Hundreds of producers all over these United States share our conviction that ANY WELL can be handled with less trouble and expense when equipped with a JENSEN Pumping Unit.

The easy way is to use whatever pumping equipment you have at hand. The PROFITABLE way is to find out about JENSEN JACKS. Barrel for barrel, there is no other way to lift oil so economically.

See your JENSEN dealer or write-wire-phone us at Coffeyville.

WRITE ★ WIRE ★ PHONE

JENSEN

BROTHERS MANUFACTURING CO.

. . . . . Coffeyville, Kansas, U. S. A.

***For detailed JENSEN JACK description and specifications, see: . . .* PRODUCING EQUIPMENT DIRECTORY *or* COMPOSITE CATALOG.**

EXPORT OFFICE: 50 CHURCH STREET, NEW YORK CITY, U. S. A.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth

KANSAS—Continued

Phillips County—
Cities Service, Pinkerton "A" 3, sw se sw 29-5s-20w 3000 3634
Reno County—
Texas Co., Collins 4, ne ne se 17-24s-4w ..... Salt W.D. 4500
Rice County—
Aylward, Volkland 4, c e½ sw ne 5-18s-10w ..... * 3290
Colorado Pet., Keesling "A", c e l se nw nw 10-20s-9w 612 3226
Branine & Holl, Thompson 2, c n l ne sw sw 17-20s-10w ..... * 3138
Mid-Plains, Nelson "B" 2, c s½ ne sw 12-21s-7w 250 3424
Rooks County—
Cities Service, Reece 2, c n½ ne se 3-9s-16w 177 3182
Rush County—
Kenwood Oil, Cisick 4, sw sw se 25-18s-14w 276 3585
Russell County—
Aylward, Holl Estate 9 c e½ ne sw 22-14s-14w 3000 3095
A. H. Witt, Bangart 1, c w½ sw sw 35-14s-14w ..... * 3260
Snowden & McSweeney, Meier 1, sw se se 20-15s-12w (pb 3326)..... * 3334
Continental, Meharg 13, 75 ft s of nw nw ne 17-15s-13w 531 3056
Derby & Crow Drlg., Dietz 1, c n½ ne ne 22-15s-14w 697 3259
Sedgwick County—
National Ref., Thompson 1, sw se nw 4-27s-2e (pb 2980) 35 3291
Stafford County—
Champlin, Figger 3, c w l sw se ne 9-24s-11w ..... * 3824
Figger 4, c n½ se ne 9-24s-11w.. 988 3789
T. A. Dines, Blackburn 1, nw nw ne 18-24s-11w ..... * 3958
Stanolind, H. F. Cornwell "B" 1, c w½ se nw 3-24s-15w ..... * 4007
Skelly et al, Kipp "B" 3, c s½ ne ne 27-25s-14w 686 3900
Stevens County—
Northern Nat., Madden 1, ne ne nw 1-33s-37w ..... ¶35.913 2821
Swisher 1, sw sw se 1-33s-37w. ¶23.842 2830
Madden 2, sw sw se 2-33s-37w. ¶25.764 2646

OLD WELLS DEEPENED

Jackson County—
Kerbo & Britton, Danona 1, nw ne nw 6-1s-19w (otd 2603) 20 2623
Stafford County—
Stanolind, Hays 1, sw sw se 11-24s-11w (otd 3790) 3000 3823

North Louisiana

Bossier Parish (Bellevue)—
C. H. French, Larkin 8, 14-19n-11w 4 393
Premier Inv. Co., Wyche 60, 14-19n-11w 10 425
Wyche 61, 14-19n-11w 40 425
Wyche 62, 14-19n-11w 55 415
Bossier Parish (Sligo)—
Triangle Drlg. Co., Jeter-Webb 4, 23-17n-12w 70 3192
Kerr C-2, 24-17n-12w ..... * 3153
Caddo Parish (Pine Island)—
Davis & Hart, Muslow A-8, 5-20n-15w 70 1508
Muslow A-10, 5-20n-15w..... 40 1520
Claude Ferguson, Chew B-2, 4-20n-16w 15 923
Chew B-3, 4-20n-16w 25 935
McDonald & Campbell, Youree 21, 13-20n-15w ..... * 2398
Magnolia, Doan-Thigpen 136, 6-20n-15w 60 1545
S. Reele, Herndon 2, 22-21n-15w.. 45 1603
John Warren, Goodwin 2, 33-21n-15w 125 1575
Stanolind O&G Co., Dillon 142, 13-21n-15w 50 1690
Texas Co., C. M. L. 55, 23-21n-15w 88 1665
Grant Parish (Wildcat)—
H. L. Hunt, Goodpine F-4, 16-8n-1e * 4643
LaSalle Parish (Little Creek)—
H. L. Hunt, Goodpine F-44, 32-9n-2e 156 2705
Goodpine F-45, 30-9n-2e 120 2695
Goodpine F-46, 30-9n-2e..... 135 4000
Goodpine F-47, 30-9n-2e..... 145 3015
Placid Oil Co., Tremont A-13, 24-9n-1e 170 2740
W. O. Woodward, Tr., Goodwin 1, 24-9n-1e 135 2450
Placid Oil Co., Tremont A-14, 24-9n-1e 160 2730
LaSalle Parish (Nebo)—
H. L. Hunt, Goodpine A-32, 16-7n-3e 160 4180
H. L. Hunt, Goodpine A-33, 15-7n-3e 145 4268
Goodpine F-63, 16-7n-3e 140 4375
Placid Oil Co., Couch 1, 28-8n-3e.. 130 4179
M. B. Dorsey 2, 10-7n-3e..... 120 4068
J. N. Gray 2, 38-7n-3e 160 4080
Wissman & Sugar, Whatley 1, 24-7n-3e ..... * 4005
LaSalle Parish (Olla)—
Ark. Fuel Oil Co., Tremont C-18, 34-10n-2e 120. 2420
Placid Oil Co., La. Central Lbr. Co. 93, 26-10n-2e 40 2425
La. Central Lbr. Co. 96, 23-10n-2e 125 2375
La. Central Lbr. Co. 11-9n-2e... * 2950
LaSalle Parish (Wildcat)—
Delta Drlg Co., 22-8n-1e ..... ¶10 4092
LaSalle Parish (Urania)—
Ark. Fuel Oil Co., Urania 8, 2-9n-1e 55 1515
Morehouse Parish (Monroe)—
Nemours Corp., Tensas Delta 2, 21-22n-4e ..... ¶3 2185
Red River Parish (Wildcat)—
Republic Prod. Co., Timon 1, 39-11n-9w ..... * 6383
Sabine Parish (Pleasant Hill)—
Pace Pet. Co., Logan B-5, 21-10n-12w ..... * 3262
Sabine Parish (Zwolle)—
Major Oil Co., Henry 4, 12-7n-13w 95 2557

South Louisiana

Acadia Parish (North Crowley)—
Humble, Reiners 8 ..... 130 8987
Acadia Parish (South Crowley)—
Humble, Freeland 1..... * 9230
Assumption Parish (Darrow Dome)—
Humble, Humble-Community 39..... * 6844
Assumption Parish (Wildcat)—
Echols & McDermott, Armleise Planting 1..... * 8897
Cameron Parish (East Hackberry)—
Texas Co., State-Calcasieu 32 Lse 50 ..... * 10123
Iberville Parish (Bayou Choctaw)—
Carter Oil, Gay Union 10..... 139 7424
Iberville Parish (St. Gabriel)—
Shell, Gueymard 6..... 248 8627
Titanic, Gueymard 3-B..... 194 7810
LaFourche Parish (Leeville)—
Texas Co., LLE-Leeville 84..... 776 8904
LaFourche Parish (Chacahoula)—
Sun, Dibert-Stark-Brown 10..... 190 7369
Plaquemines Parish (West Bay)—
Gulf, Buras Levee Dist. 5-E..... 487 7340
St. Charles Parish (Paradis)—
Texas Co., LLE-Paradis 14..... 476 10350
St. Martin Parish (Section 28)—
S. Rhodes, St. Martin Land 1..... * 3275
Superior, St. Martin Land 2-B.... * 9454
St. Martin (Anse la Butte)—
Iberia Pet., Moresi 6-A..... 150 3080

Michigan

Allegan County—
Clifford Perry, McDermott 1, ne sw nw 18-3n-12w 140 1560
W. Spencer Cook, Layton 1, ne se ne 13-3n-13w ..... * 1600
George Kernodle, Bond 1, sw nw se 10-4n-13w ..... * 1650
Clare County—
Sun, Hamer 1, c w½ se nw 29-20n-6w 95 3784
Lake County—
Ohio, Pelser 1, c s½ se se 6-18n-11w ..... * 3666
Gulf, Bolger 1, c s½ se ne 24-18n-11w 145 3711
Montcalm County—
R. A. Well, O'Brien 1, sw se ne 22-11n-5w ..... ¶1½ 1094
Oceana County—
C. W. Teater, Skidmore 1, se nw se 11-16n-16w ..... * 2021
Osceola County—
Pure, Campbell 1, c s½ nw sw 19-18n-10w 2800 3617
Small 1, c s½ nw ne 29-18n-10w. 6000 3560
Dunn 1, c s½ sw ne 29-18n-10w. 4000 3550
Gingrich 3, c s½ sw sw 30-18n-10w 3440 3650
Ohio, Auten 1, c n½ ne nw 29-18n-10w 6000 3523
C. W. Teater, Hewitt 1, c n½ nw sw 32-18n-10w 2600 3640
Van Buren County—
Fisher-McCall, Wiggins A7, nw nw ne 16-1s-14w 10 1203

Mississippi

Lauderdale County (Wildcat)—
Pierce Watters, Meeds 1, 26-5n-15e * 4526
Yazoo County (Tinsley Dome)—
Hassie Hunt, Martin 2, 35-10n-3w. 768 4843
E. C. Johnston, Brumfield 3, 36-10n-3w ..... * 4875
Kirby Pet. Co., Stutts 6, 30-10n-2w 475 5020
Magnolia, M. Payne 9, 35-10n-3w.. 500 4906
Phillips, Kilmar 1, 6-9n-2w..... 125 5100
Twiner 2, 6-9n-2w 88 5105
Snowden & McSweeney, Hanley 2, 35-10n-3w 720 4800
Union Prod. Co., J. R. Williams 2, 35-10n-3w 384 4786

Montana

Blaine County (Bowes)—
Montana Gas Corp., Dineen 1, c nw nw 2-31n-19e..... * 956
Carbon County (Frannie)—
Continental Oil Co., Merrill 1, sw sw sw 34-9s-25e 33 3556
Glacier County (Cut Bank)—
Castle & Pardee, Tribal-198 1, se ne nw 30-32n-5w 50 2951
Consolidated Gas Co., State 4, nw sw ne 26-35n-6w 25 2815
R. C. Jeffries, Tribal-197 1, ne se nw 30-32n-5w 360 2910
Santa Rita Oil & Gas Co., Rasmussen 4, se sw sw 33-33n-5w..... 75 2870
Texas Co., Curran 7, c se nw 8-32n-5w ..... * 3000
Wright-Haggerty, Tribal 1, se sw sw 18-32n-5w 100 2945
Hill County (Box Elder)—
Independent Natural Gas Co., Kinipel 1009, nw ne se 15-32n-17e .... ¶5 1286
Phillips County (Bowdoin)—
Montana Dakota Utilities Co., Bell 643, c ne sw 32-32n-34e..... ¶½ 880
Bank of Malta 642, c nw se 7-32n-34e ..... ¶½ 932
Teton County (Pendroy)—
R. C. Tarrant, Kellogg 1, sw nw ne 33-27n-5w ..... * 2912

New Mexico

Eddy County—
Clower & Hover, State 1-A, nw sw nw 2-18s-28e ..... * 2740
Emperor Oil Co., Puckett 5-B, c se sw 24-17s-31e ..... † 1770
Wilmar Oil Co., Ginsberg 2-B, c ne nw 17-18s-31e 150 3169
Lea County (Cooper)—
Culbertson & Irwin, Cooper 2, c se nw 12-24s-36e 60 3646
Lea County (Lovington)—
Magnolia, State 3-R, c ne se 2-17s-36e 105 4980
Lea County (Vacuum)—
Phillips, State-Santa Fe 45, nw se nw 5-18s-35e 96 4620
McKinley County—
Pet. Products Co., State-Wilson 17, ne se sw 36-18n-9w 126 1669
San Juan County—
Al Greer et al, Thompson 2, sw se sw 10-30n-11w ..... ¶ 2362
Southern Union Prod. Co., McDaniels 1, nec 19-29n-11w..... †¶ 1820

New York

Allegany County—
Messer Oil Corp., Vosburg farm, Bolivar 10 1380
B. & B. Oil Co., Curtis farm, Bolivar 10 1429
Lawrence Muelendyke, Smith farm, Bolivar 7 1379
Gilligan & Dermitt, Gilligan farm, Bolivar 12 1283
Star Oil Co., Neff farm, Bolivar.. 9 1373
McEnroe & Randall, Reid farm, Alma 12 1529
Curt Oil Co., Williams farm, Alma 8 1352
The Otsquago Corp., Pike farm.. 8 1436
Bradley Prod. Corp., Crandall farm, Alma 6 1256
Harder & Mitchell et al, Bradley farm, Bolivar 6 1376
McEbenwood Oil Co., Dean farm, Andover 7 1379
Bliven Hill Oil Co., McEwen-Norton farm, Amity 5 887
Messer Oil Corp., Beaver farm, Wellsville 6 860
Otto Oil Co., Bartlet farm, Bolivar 6 1342
Tress Oil Co., Wilber farm, Bolivar 7 1387
Water Intake Wells—
Messer Oil Corp., Vosburg farm, Bolivar 1382
Pure Penn Pet. Corp., Christman farm, Bolivar 1430
Angie Tullar No. 10, Mix farm, Bolivar 1473
Messer Oil Corp, Miles farm, Bolivar 1446
V. V. V. Franchot, Emerson farm, Scio 1275
Wheel Oil Co., Norton farm, Scio .. 1356
The Otsquago Corp., Pike farm, Alma 1474
L. E. Norton et al, Coats farm, Scio 1321
Marsh Oil Co., Fay farm, Bolivar .. 1439
Wm. J. Lynch, Lynch farm, Andover 1340
Howard Gowdy et al, Frederick farm, Alma 1269
H. W. Patterson et al, Ockerman farm, Amity 820
Browning farm, Scio 726
Browning farm, Scio 729
Bliven Hill Oil Co., McEwen-Norton farm, Amity 920

United States Well Completions—*Continued*

Ohio

Ashland County—
Lyons et al, McClure 1 .....¶ 3.8 2813
Hoag et al, Mosher 2 ..... * 735
Ashtabula County—
Ohio Oil Co., Conneaut Land Co. 15..¶0.48 541
Athens County—
Wickens, Meeks 4 .....¶0.08 675
Gibson, Felton 7 ..... 4 460
Choquill et al, Laughlin 1.....¶0.28 1026
G. & K. Oil & Gas Co., Felton 5.. 12 450
Coshocton County—
Pure Oil Co., Ashcraft 14 ..... 107 3306
Ohio Fuel Co., Hays 1 .....¶ 0.7 3363
Cuyahoga County—
Holy & Cummins, Koaman 1.....¶ 0.6 3116
Guernsey County—
Wilbur Keith, Dedich 1 ..... * 1381
Hocking County—
Ohio Fuel, Sunday Creek Coal Co., 204 .....¶0.69 1136
Knox County—
Ohio Fuel, Horton 1 .....¶1.25 2910
Licking County—
Wittmer Co., Warner 1 ..... * 2450
Innis Bros., Parmalee 1 .....¶1.22 2570
Kundtz-Hulse, Inc., Bratton 1....¶0.26 2650
Loraine County—
Edson & Son, Meyers 1 .....¶ 1.0 2397
Wiser Oil, Moulter 1 ..... * 2432
Medina County—
Thornton Prod. Co., Ross F9 ..... 5 437
Foss F11 ..... 5 477
Ross F18 ..... 5 479
Ross F25 ..... 5 477
Stentz F33 ..... 1 411
Meigs County—
Ohio Fuel, Hutton 1 ..... * 1618
Monroe County—
Hall & Henning, Smith 2 .....¶0.07 2090
Otto Spingler et al, Swartz 27....¶0.08 1099
Morgan County—
Ross et al, Mayler 1 ..... * 950
W. S. Harris, Starling 1 .....¶ 0.4 885
Ohio Fuel, Ribble 1 .....¶11.0 4254
Swingle et al, Stoneburner 1.....¶0.07 1263
Noble County—
Virgil H. Watson, Fee 1 .....¶0.05 1798
William Patton, Cunningham 12.... 2 815
Ohio Fuel, Shawhart 1 .....¶0.05 1567
Perry County—
Preston Oil Co., Love 1 ..... * 2697
Pure Oil, Rhoades 1 ..... 52 3212
Preston Oil Co., Young 1 .....¶ 0.4 2960
Smithley 1 ..... 372 3285
Palm Oil, Amerine 4 .....¶0.75 817
Stark County—
J. S. Steiner, Watson 1 .....¶0.97 4585
Washington County—
John Herlan et al, Matheney 2.... 4 1156
Joseph F. Ward, Fee 12 ..... ½ 390
Meister & Blair, Hall 2..... * 525
Henning Bros., Rinard 3 .....¶ 0.2 1769
OLD WELL DRILLED DEEPER
Athens County—
Ohio Fuel, Linscott 2 .....¶0.05 1560
Monroe County—
J. C. Luburgh, Swartz 15 .....¶0.04 1110

Oklahoma

Carter County—
W. E. Stephens, Tr., Carter 2, 110 ft s of sw nw sw 13-1n-3w..... 2930
Leon et al, Merrick et al 1, nw ne nw sw 20-4s-2w 225 2240
Creek County—
Balph et al, Starr 1A, sw c se 7-15n-8e (pb 3828) 72 3832
Sinclair Prairie, Jones 30, c e½ sw nw 3-17n-7e 42 2605
Grady County—
T. H. McCasland, Wham 2, nw c ne 34-3n-5w 86 1484
Razin Bros., Nations 3, nw nw se 34-3n-5w ..... * 1943
Kiowa County—
Dempsey, Fee 1A, ne nw se ne 31-4n-18w ..... * 560
Anderson & Maddox, Clark 1, sw c ne 19-7n-16w ..... * 1554
LeFlore County—
Western O&G, Stathan 1, 205 ft e of c e½ se ne 32-9n-24e.....¶8.0 5202
Lincoln County—
Kerlyn, Tipkin 1, ne ne sw 15-13s-ne (pb 4119) .....¶20 4135
Muskogee County—
S. K. Roundsaville, Dillon 2, sw c se ne 17-13n-16e 30 2118
Okfuskee County—
Malarnee, Beard 2, sw sw ne 7-11n-8e 250 3711
Margay, Long 1, ne nw se 7-11n-8e 200 3682
Titus, Sands 6, nw sw se 26-11n-8e.2216 3435
Shell, Hicks 3, nw sw ne 25-11n-8e 332 3426
Van Pelt 5, sw ne nw 35-11n-8e.. 115 4100
Dunn 2, sw sw nw 36-11n-8e (pb 2731) .....Salt Wtr. Disp. 3461
Phillips, Replogle 4, ne sw nw 26-12n-8e 447 3696
Oklahoma County—
Harper & Turner, Harper 1, nw nw sw 17-14n-2w 35 5925
Harper 2, se sw nw 17-14n-2w .. 45 5910
Okmulgee County—
Wallace, Colbey 22, nw se sw ne 14-14n-14e ..... * 597
Osage County—
Texas Co., Barelegs 1, se se sw 9-23n-7e 273 3014
Pontotoc County—
H. Z. Moore, Myers 1A, sw se se 21-5n-6e ..... * 1984
Pottawatomie County—
Nute Barrett, Buckley 1A, nw nw ne 7-6n-4e ..... * 135
Davon, Townsend 1, ne ne nw 7-6n-4e ..... * 4413
Amerada, Peters "A" 2, ne se nw 27-8n-4e 388 3958
S. V. Viersen, Tibbin "B" 1, sw nw ne 27-8n-4e 524 3965
Atlantic, Lee 2, se nw se 16-9n-4e.. 29 4627
Higbee 2, se sw sw 22-9n-4e.... 648 4671
Sun, Kessinger 1, nw nw sw 25-9n-4e 480 4435
Anderson & Pritchard, Nadeau 1, c sw sw 19-9n-5e 240 4145
Seminole County—
Keener, Strothers 1, sw sw sw 28-7n-7e ..... * 3624
Stephens County—
L. Sikes, Blades 12, 160 ft n of c e½ e½ 32-1s-8e 30 2218
Magnolia Pet., Dillard 30, se sw nw ne 2-2s-5w 35 700
T. H. McCasland, Burkleo 2, se nw nw 4-2s-8w 18 2253
G. L. Pace, McMasters "B" 2, se c sw ne 13-2s-8w ..... * 2040
Carl Carter, Peck 1, ne c se ne 1-3s-6w .....¶9.680 436
Tulsa County—
T. E. Turner, Hagie 1, se c ne ne 11-16n-12e (pb 1924) ..... * 1933
OLD WELL DEEPENED
Jackson County—
Kerbo & Britton, Danona 1, nw ne nw 6-1s-19w (otd 2603) 20 2623

Pennsylvania

Bradford District—
Pure Penn Oil, Inc., Kinley Oil Co. 8 ....
B. McCaffery et al, McCaffery.. 1 ....
Miller Bros., fee ..... 7 ....
B. E. L. Oil Co., fee..... 1 ....
Penn Valley Crude Oil No. 2, fee 1½ ....
Messer Oil Corp., Redfield..... 2 ....
D. Y. M. Corp., Bing 466 ..... 2 ....
Hillside Oil Co., Smith ..... 1 ....
Bradford Transit Co., 23 wells... 23 ....
Forest Oil Corp. ..... 1 ....
Forest Petroleum Corp..... 1 ....
Niagara Oil Corp. ..... 4 ....
Water Intake—
Penn Valley Crude Oil No. 2, fee.. .. ....
Melvin Towne Oil Co., fee..... .. ....
Merry Bros., Burger..... .. ....
Forest Oil Corp. ....
Niagara Oil Corp. ....
Niagara Oil Corp., 2 wells ....
New York-Penn. Gas Field—
Belmont Quadrangle Drlg. Corp., C. L. Lynch ....
Middle District—
Lillian B. & Geo. S. Goldstein, Morris Goldstein No. 2 ..... * ....
Wade Gibson Gas Co., John Obedrader ..... ¶ ....
First Natl. Bk. of Oil City, Frank Messina ..... ½ ....
M. M. Master, Gibbs ..... * ....
South Penn Oil Co., Smith & Grace 2 ....

Southwest Pennsylvania

Armstrong County—
Humphries, Stone & McCall, Gould 1 .....¶0.03 3301
T. W. Phillips Gas & Oil Co., Dunmire 2 .....¶0.04 3500
Fayette County—
Duquesne Company, Gross 1..... * 2518
Greene County—
Manufacturers Light & Heat Co., Grimes 1 .....¶ 1.3 2838
Carnegie Natural Gas Co., Baldwin 2 .....¶ 0.3 3246
Indiana County—
T. W. Phillips Gas & Oil Co., Tiller 1 .....¶0.11 1712

Texas Panhandle

Gray County—
Skelly, Taylor 2 ..... 520 2993
W. H. Taylor et al, Fee 6 ..... 49 3004
Texas Co., Taylor 3-F 253 2900
Texwell Oil Corp., Davidson 4 .... 696 3067
Hutchinson County—
Danube Oil Corp., Sanford 5-A ... 420 2823
Phillips, Supreme 6 ..... 294 3271
Shell, Harvey Sisters 34-B 346 3081
Stanolind, Moore 7 ..... 360 3105
Moore County—
Magnolia, E. C. Brittian 9 ..... ¶42 2980
Shamrock O&G Co., Luckhardt 1 .¶85.3 3495
Wheeler County—
Fain-McGaha Oil Corp., Gorgan 1 ¶14.3 1900
H. L. Guild et al, Walker 2 ..... 720 2025

North Texas

Archer County (Scotland)—
R. H. Hawn et al, Edwards-Texaco 1 (pb 5250) 1368 5621
Archer County (Hull-Silk)—
Gulf, Siegel 26 (pb 4006)..... 576 4405
A. Massie et al, Wilson 10..... 472 3994
Archer County—
Craig & Wilson, Frerich 1..... * 933
W. B. Hamilton et al, Green 3-A 60 1147
Harris & Taylor, Campbell 1..... * 1380
Pet. Producers Co., Richardson 24-D 60 1260
Archer County (Wildcats)—
H. Farmer et al, Elmore 1..... * 1304
Chas. Peachacek et al, fee 1..... * 1180
Clay County—
Harper & Knappenberger, Bilbrey 5 50 1192
Johnson & Kouri, Taylor 8..... * 1153
Taylor 2-E ..... * 251
Homer Lee et al, Wiley 1..... * 1201
W. H. Metzner et al, Taylor 23.... * 1186
The Texas Co., J. P. Boddie 1.... 80 1046
Mary Stephenson 4 ..... 52 1162
Cooke County—
Kewanee Oil Co., Hyman-Lanier 18-B ..... * **2042**
E. W. Mudge Jr. et al, Fette 7.... 12 1119
Seitz-Comegys & Seitz, Poteet 14.. * 1440
Trumter Oil Co., Andress 26-B 10 756
Jack County—
I. Worsham et al, Leach 5-A 768 2936
Knox County (Wildcat)—
Seitz-Comegys & Seitz, Haskins 1.. * 5012
Montague County—
Bridwell Oil Co., Begley 3-D..... 7 823
Throckmorton County—
A. A. Bradford et al, McKeichan 1 ¶3 535
Consolidated Oil Co., Cooke 2.... * 744
R. F. Gilman et al, Tuton 1 ..... 8 743
J. B. Putman et al, fee 1..... 8 674
Fee 2 ..... 22 673
Wichita County—
G. W. Griffith et al, Porter 1..... * 555
W. H. Hammon et al, Johnson 7.. 101 1318
Hanlon & Buchanan, Burnett 8-AA 9 728
Kemrow Co., Burnett 57-B (pb 1908) 10 3731
C. H. Morrison et al, Powell 1.... * 1902
Pet. Producers Co., Roller 1..... * 294
R. G. Drl. Co., Warren 3 ..... 72 1769
C. F. Schram et al, Daume 1..... 10 685
Wolfe & Hull, Daume 10 ..... 10 705
Wichita County (Wildcat)—
Paul H. Sisk et al, Sisk 1..... * 110
Wichita County (K-M-A)—
Hanlon & Buchanan, Fassett-Tuttle 13-E 448 4036
Wichita County (K-M-A Ellenberger)—
Shell & Phillips Pet., Griffin 35-E..2440 4496
Griffin 37-E 3024 4278
Tide Water Associated et al, Ferguson 5-E 584 4327
Wilbarger County (Fargo)—
Anderson-Prichard Oil Corp., Sears 1 (pb 3966) 368 4431
Young County (Wildcat)—
Marie Eckert et al, Gadberry 1.... * 970
Young County—
Collins & Riley, Porter 3..... * 625
Consolidated-Ray Oil Co., Dunagan 1 ..... * 5005
Cosden Pet. Corp., Sewell 5-A..... 504 4223
L. M. Hooker et al, Cullers 10.... 6 625
Cullers 11 ..... 5 655
Panhandle Ref. Co.-Ben Rankin, King-Wooten 3 ..... 64 2814
H. B. Streit et al, Jack 6-C 2 573
J. G. Wooten et al, King-Hawkins 1 * 495
Henry Zweifel et al, Martin 5.... 576 2507
Sewell 5-C..... 561 2535
OLD WELLS DEEPENED
Wichita County—
Rubsam-Switzer-Widner, McClure 18-A (otd 580)..... 8 817
Wilbarger County—
Magnolia, Waggoner-H&TC 34 (otd 1032) ..... * 3362

Southwest Texas

CORPUS CHRISTI DISTRICT
Brooks County (Alta Mesa)—
Standard of Texas, Mestina 18.... 91 3031
Jackson County (Lolita)—
Magnolia, Mary Mitchell 29..... 475 5943
Jackson County (North LaWard)—
H. M. Christie, Pickering 1, outpost 400 5223
Jackson County (West Ranch)—
L. Crouch, State 3 ..... 450 5506
Magnolia, West 199-A 500 5761
Jackson County (West Ganado)—
Pure, E. T. Cravens 3 ..... 500 4854
J. R. Cravens 3 ..... 500 5552
Frank Spacek 5 ..... 450 5500
Jackson County (Wildcat)—
Mayo & Boyle, First Nat'l Bank of Georgetown ..... * 6012
Jim Wells County (Orange Grove)—
Kilgore Dev., J. J. Kuck 1, outpost 525 5080
Jim Wells County (Wildcat)—
Porter & Bruton, Haverlah 1..... * 5110

[Continued on next page]

United States Well Completions—*Continued*

SOUTHWEST TEXAS—Continued

Company, Well and Location	Init. Prod. Bbls.	Depth
Nueces County (Agua Dulce)—		
Tom Graham, Wallace 1	¶80 & 200	6980
L. M. Lockhart, Von Blucher 2	¶100 & 250	7175
Nueces County (N. Agua Dulce)—		
S. E. W. Oil Corp., Land Bank 7	350	5632
Nueces County (Bentonville King)—		
Southern Minerals Corp., King 20	350	5610
Nueces County (Minnie Bock)—		
Tom Graham, Ross Rutland 3	36	3840
Nueces County (Clara Driscoll)—		
Phillips, Gandy-Crystal 2	*	5945
Nueces County (S. Clara Driscoll)—		
Texas Conservative, A. W. Huie 8	¶20	5840
Nueces County (Stratton)—		
Southern Minerals, Stratton-Community 31	500	6690
Stratton-Community 28	500	6690
Refugio County (Refugio)—		
Hewit & Dougherty, Reilly et al 3	500	6383
San Patricio County (Midway)—		
Pan American, F. E. Morris 1	*	6573
San Patricio County (Plymouth)—		
Plymouth, Welder 120-C	400	6145
Victoria County (Victoria)—		
W. S. Boyle, Fox et al 3	250	3328
SAN ANTONIO DISTRICT		
Bexar County (Gas Ridge)—		
L. Corning, Jr., Bitter 4	2	505
Bexar County (Wildcat)—		
G. C. Sumar, Peterson 1	*	1287
LAREDO DISTRICT		
Duval County (Wildcat)—		
Humble, Welder 1-E	*	4513
Jim Hogg County (Colorado)—		
C. Andrade III, Trevino 3-H	425	2894
Humble, King-Colorado 37-B	125	3009
King-Colorado 39-B	600	2862
Jim Hogg County (Wildcat)—		
Sun, A. Ramirez 1	*	4507
McMullen County (S. Callihan)—		
E. M. Jones, H. Ezzell 100	*	1090
McMullen County (Jacob)—		
Loma Oil Co., Jacob 111-A	11	978
McMullen County (Wildcat)—		
Mabel Rossi, Brown 1	*	896
Starr County (Kelsey)—		
Navarro, Trevino 2	400	4804
Starr County (Rincon)—		
Continental, Slick 111-A	700	4195
Starr County (Wildcat)—		
F. A. Gillespie & Sons, Guerra 1	*	2512
Guerra 2	*	1325
Webb County (Killam)—		
O. W. Killam, Garcia & Villareal 19	70	2076

East Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Kilgore Area—		
Bostex Oil Corp., A. Spear 6	1800	3556
Bowles Oil Co., Wells 20	1200	3660
C. R. Starnes et al, Money 43	750	3588
Longview Area—		
Shell, J. N. & V. King	2500	3680
Tide Water Associated, Lake Devernia 49	3000	3498
Anderson County (Long Lake)—		
Tex Harvey Oil Co., Cartmel 7	72	5402
H. L. Hunt et al, Broyles-Wolverton 7	85	5363
Alex McCutchin et al, Reagan 2-B	114	5318
Delta County (Wildcat)—		
Talco Asphalt & Ref. Co., Peek 1	*	4698
Gregg County (Willow Springs)—		
Roger Lacy et al, Horton-Dickson 1 (pb 6770, new pay)	¶60	7327
Limestone County (Mexia)—		
Lytle & Phillips, Desenberg 1	20	3250
Rusk County (New Salem)—		
M. D. Bryant et al, Ashby 1-B	†	2912
Wood County (Hawkins)—		
Humble, L. A. Bryan 1-B (164¾-ac)	362	4818
W. Holt 1 (21/100-ac)	406	4832
E. Prince 2 (96.81-ac)	411	4852
Republic Ins. Co. 1 (149-ac)	485	4764
F. K. Williams 2 (153¾-ac)	449	4834
Navarro Oil Co., Maberry 5 (95.65-ac)	354	4794
Stanolind, Jeffery 1 (46.77-ac)	385	4853
Texas Co., Cobb 3 (160.4-ac)	335	4820

West Central Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
Central Texas Gas Co., Buckners 2	¶ 15	1582
Hightower O&R Co., Buckners 3-B	25	1524
Callahan County (Wildcat)—		
F. E McCreedy et al, George 2	*	850
Callahan County—		
A. H. O'Dell et al, Barr 1	*	375
Ungren-Frazier et al, McDonald 1	*	1117
Coleman County—		
States Oil Corp., Barnett 1-B	220	3539
Comanche County (Wildcat)—		
Rudy Grossenbacker et al, Polk 1	*	810
Jones County—		
J. L. Collins & Co., Fikes 2	432	2345
Falls Ref. Co., Spurrier 2	*	2359
Merry Bros. & Perini, Wimberly 1	412	2232
Shackleford County—		
R. H. Roark et al, Elliott 11	*	983
R. L. Rust et al, English 2	*	549
Stephens County—		
Helmerich & Payne, Smith 1	*	3279
Taylor County (Wildcat)		
Hedrick Oil Co., Arrant 1	*	2505

West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Brewster County (Wildcat)—		
F. Turner Jr. et al, Turney-Humble 1	*	2001
Cochran County (Slaughter)—		
Anderson-Prichard, Neal 1	437	5040
Atlantic, Boyd-Humble 21 (pb 5068)	849	7000
Honolulu Oil Corp., Igoe-Smith 10	888	5040
G. P. Livermore, Inc., Boyd-Texaco 15	1101	5080
Magnolia, Woodley 15	983	4991
Crane County (Gulf-McElroy)—		
Gulf, McElroy 254	661	2979
Crane County (Gulf-Waddell)—		
Gulf, Henderson 28	9024	3510
Waddell 46	*	3681
Crane County (Sand Hills)—		
Gulf, Waddell et al 31	1921	4570
Magnolia, Lea 7	471	4570
Crockett County (Wildcat)—		
Moore Bros. et al, Childress-Halff 1	*	1502
Ector County (Foster)—		
Sinclair Prairie, Palmer 7	*	4311
T. P. Coal & Oil Co., Johnson 5	644	4235
Ector County (Jordan)—		
Texas Co., McDonald 8	408	3705
Ector County (North Cowden)—		
Stanolind & M. J. Delaney, Smith 1-D	151	4470
Smith 2-D	166	4560
The Texas Co., Holt 9	177	4495
Holt 14	1057	4690
Holt 15	571	4580
Gaines County (Seminole)—		
Amerada & Humble, Blakemore 4	585	5350
Harry W. Bass et al, Austin-Standard 6	626	5210
Humble & T. P. Coal & Oil Co., Blakemore 4-B	432	5330
Magnolia-Atlantic, H. & J. 2-193	292	5230
Gaines County (Wasson)—		
Continental & Amon Carter, Wasson 14-48	1038	4966
Hockley County (Slaughter)—		
Honolulu Oil Corp., Mallet 12-B	953	5026
Mallet 15-B	1029	5025
Magnolia, Mallet 13-D	1291	5000
Mallet 14-J	1393	5040
Stanolind, Slaughter 32-B	803	4983
Slaughter 33-B	933	5016
Slaughter 34-B	872	5000
Texas Co., Cattle Raisers 3	1007	5012
Mallet 7-B	1523	4997
Mallet 15-E	1774	5028
Slaughter 37 (6219-ac)	1546	5000
Slaughter 45	1899	5025
Slaughter 46	1595	5005
Slaughter 48	1115	5000
T. P. Coal & Oil Co., Mallet 3-B	1087	5033
Howard County—		
FHE Oil Co. et al, P. Jones 1	330	2750
Pecos County (Abell)—		
Sinclair Prairie, Heierman 2	1718	5476
Pecos County (Yates)—		
Plymouth Oil Co., Bailey 5	155	1848
Scurry County (Wildcat)—		
Pearson-Sibert Oil Co., Addison 1	*	2620
Upton County (McCamey)—		
Trebol Oil Co., Rodgers-Shell 7	33	2367
Ward County—		
Gulf, Hutchings 162	298	3100
Winkler County (Emperor)—		
C. V. Lyman et al, Cowden-Tidal 3	541	2891
Winkler County (Hendrick)—		
Texas Co., Cowden 3-B	259	2990
Winkler County (Keystone)—		
Gulf, Keystone 43	157	3481
Yoakum County (Waples-Platter)—		
Shell, Hammer 1 (pb 5351)	546	4700
OLD WELL DEEPENED		
Upton County (McClintic)—		
T. P. Coal & Oil Co., Bell 1 (otd 3135)	317	3227

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Brazoria County (Old Ocean)—		
Harrison & Abercrombie, BRLD 11	415	10859
Brazoria County (West Columbia)—		
Texas Co., Abram 48	335	5749
Chambers County (Anahuac)—		
Humble, Middleton 62	717	7226
Fort Bend County (Wildcat)—		
Providence Oil, Hruzek 1	*	8615
Fort Bend County (Needville)—		
W. L. Goldston, Coyle 1	¶	6463
Hardin County (Saratoga)—		
Rio Bravo, Fee C-540	*	1641
Harris County (Wildcat)—		
Ralph Johnston, H. C. Cockburn 1	*	7520
Harris County (Pierce Junction)—		
Hamill & Smith, Bender Est. 4	212	3233
Jefferson County (Fannett)—		
Gulf, Bordages 12	669	8335
Gulf, Thomas 1-A	627	6259
Liberty County (Esperson)—		
General Crude, Sun 34	¶	8003
Liberty County (South Esperson)—		
General Crude, Sunderman 1	*	7241
Matagorda County (Markham)—		
Hamill Drilling, Myers A-4	219	2446
Matagorda County (North Markham)—		
Ohio, Carlson 11	184	7985
Matagorda County (Wilson Creek)—		
Barnsdall, Doman 1	*	10110
Montgomery County (Conroe)—		
J. H. Blaffer, Bailey 1	421	5096
Orange County (West Port Neches)—		
Phillips, Stark 8	124	3550
Wharton County (Magnet)—		
Humble, Cockburn 48	18	3550
Wharton County (Withers)—		
Texas Co., Withers Est. B-79	60	5549

West Virginia

Company, Well and Location	Init. Prod. Bbls.	Depth
Cabel County—		
Cumberland Gas Company, Ellis 1	¶	3333
Calhoun County—		
Hope Nat. Gas Co., Bennett 8572	¶0.09	1645
Knotts 8574	¶ 0.5	1487
Doddridge County—		
Coffman Oil & Gas Co., Estlake 1	¶0.13	2875
Gilmer County—		
Pittsburgh & W. Va. Gas Co., Shuman	¶	1905
Chartiers Oil Co., Stump 8	¶0.04	1715
Jackson County—		
Mullers & Hayes Oil & Gas Co., Sweezy 1	¶10.07	5010
United Fuel Gas Co., Heilman 5029	¶ 6.1	5172
Boggess Drlg. Co., Nuzum 1	20	2781
United Fuel Gas Co., Shephard 5031	¶10.0	5087
Kanawha County—		
South Penn Nat. Gas Co., Ray-Sayers 2	¶ 3.5	1507
Lewis County—		
Mud Lick Oil & Gas Co., Davison 6	*	2391
Lincoln County—		
Cambridge Gas Co., Mullins 1	108	3679
Putnam County—		
United Fuel Gas Co., Lake 5000	¶1.05	1820
Midway City Gas Co., Switzer 5	¶0.20	3770
Ritchie County—		
Hope Nat. Gas Co., Hatfield 8559	*	2067
Roane County—		
Joseph Fields, Fee 2	¶0.34	1417
O. H. Reed, Morrison 1	*	1545
Upsher County—		
Central Oil & Gas Co., Fee 4	¶0.18	1478
Wetzel County—		
South Penn Gas Co., Cox 11	6	2352
Carnegie, Glover 1	¶0.13	3449
OLD WELLS DRILLED DEEPER		
Kanawha County—		
Columbian Carbon Co., Jones 1	¶1.73	5167
South Penn Nat. Gas. Co., Ray-Sayers 2	¶ 3.5	1507

Wyoming

Company, Well and Location	Init. Prod. Bbls.	Depth
Niobrara County (Lance Creek)—		
Continental, Rohlff 14, nw nw sw 32-36n-65w	170	5182

South Texas Geologists Revise Names of Fields

William H. Spice, chairman of the Nomenclature Committee of the South Texas Geological Society, has announced the first revisions in South Texas field names in an effort to standardize the classification of these producing areas. It is expected that ultimately many of the areas now merged into single fields will be renamed.

East Premont, Jim Wells County, hereafter will be known as Seeligson, and the former Seeligson field will be referred to as Haldemann. LaWard has been classified as Maubro. The so-called Petronilla field, just opened in Nueces County, has been classified as a new sand discovery for the North Luby pool.

Four newly discovered pools have been named as follows: South Dale in Caldwell County, opened by Ogden & Riddle's Copeland 1; North LaWard in Jackson County, discovered by Moore & Ahern's Burditt 1; South White Creek, Live Oak County, the result of a producer in Joe Stelzig et al's Everett 1; and Yturria, Starr County, discovery of Sun Oil Company in Yturria Land and Live Stock Company 1.

WILDCAT REPORT
New Starts and Completions

ARKANSAS
FIRST REPORTS
LaFayette County—Barnsdall Oil Co., Bond 1, nw sw 11-15-24, mat.
Ouachita County—E. L. Foster, Miller 1, se se nw 4-15-18, mat.
COMPLETIONS
Clark County—Coker Oil Co., Cabe 1, sw sw 25-10s-19w, abnd 712 ft. McMillan & Cane 1, sw ne 34-10n-19w, top Nacatoch 662 ft, top Smackover lime 1394 ft, abnd 1425 ft.
Nevada County—Coker Oil Co., DeWoody 1, ne sw 23-11s-20w, abnd 1900 ft.

ALABAMA
COMPLETIONS
Clarke County—Union Prod. Co., Waite 1, c nw 27-8n-1w, top Pottsville (estimated) 11,700 ft, anhydrite (estimated) 11,800 ft, abnd 12,399 ft.
Madison County—Mellen & Thompson, Baldridge 1, ne ne nw 8-1s-1e, top Silurian 11 ft, Ordivician 90 ft, Stone River 468 ft, St. Peter 1140 ft, sw show 1142 ft, abnd 1172 ft.

CALIFORNIA
FIRST REPORTS
Fresno County—Shell Oil Co.'s Santa Ana & Fresno Lands 31-19, 19-15-18, rig. Amerada Petroleum Corp's Lawton 45-26, 26-17-19, fndn.
Kern County—Alpha Oil Co.'s Elliott 1, 1-27-28, dr.
Los Angeles County—Shell's Mission 2-1, 25-3-16, lcn.
COMPLETIONS
Fresno County—Wilshire Annex Oil Co.'s No. 33-26E, 26-21-15, bottomed 6031 ft, plugged 3960 ft, temblor 3885 ft, Kreyenhagen 4680 ft, Cretaceous 6025 ft, pumping 76 B/D rate, 39.5-gr oil cutting 0.1%. Potential estimated 100 B/D, Jacalitos Hills discovery well.
Los Angeles County—Texas Co.'s McNally A-1, 22-3-11, abnd 9000 ft. Louis B. Altschuler's Larry 1, 30-2-9, abnd 1256 ft.
Ventura County—Glen Ogles Oil Co.'s Lisk 1, 21-5-18, abnd 1791 ft.

COLORADO
FIRST REPORTS
Kiowa County—Stanolind's Snell 1, c se sw 7-20s-41w, South Tower block, geophysical high, 36 miles northwest Stanolind's Patterson pool discovery of western Kansas, lcn.
Routt County—Elk River Oil Co.'s Fred N. May 1, c se se 34-8n-86w, Elk River Dome, Chimney Rock district, sp, objective, Sundance at 2600 ft.

ILLINOIS
FIRST REPORTS
Clark County—O. J. Jeffers' Conady 1, sw sw ne 1-9n-12w, lcn.
Clay County—J. W. Sanders et al's Thompson 1, c n½ nw se 30-3n-6e, dr.
Franklin County—Carter's U. S. Coal & Coke Co. 1, sw se nw 20-6s-4e, lcn.
Hamilton County—Ohio's Aydt 1, ne se nw se 3-4s-5e, lcn.
Jackson County—Salomon's Valentine Hrs. 1, sw sw sw 34-7s-4w, lcn.
Marion County—Deaton & Bears' Sundesky 1, e½ nw sw 33-1n-4e, lcn.
Washington County—E. J. Bergundthall's Demet 1, sw nw nw 32-2s-4w, lcn.
Wayne County—Kingwood's O'Neil 1, s½ se se 17-1s-6e, lcn.
COMPLETIONS
Clay County—Glenn Scott's Rodgers 1, ne nw nw 37-4n-7e, Tar Sprgs. 2313-14 ft., 25 bbls. water, 20 bbls. oil. Carl Robinson's Coggan 1, sw sw sw 17-4n-8e, abnd. 3021 ft.
Cass County—E. J. Brown's Stibling 1, sw se sw 9-17n-8w, abnd. 501 ft.
Franklin County—Oil Carriers, Inc.'s Casper 1, se sw nw 1-6s-2e, Pt Crk sd 2606-23 ft, TD 2623 ft, 240 bbls oil. Oil Carriers, Inc.'s Wayman 1, se nw sw 1-6s-2e, Bethel 2580-95 ft, McC. 2783-88 ft, td 2963 ft, 10 bbls water, 70 bbls oil. F. McQuigg's Old Ben Coal Co. 1, ne se nw 5-6s-2e, td 2988 abnd.
Jefferson County—Longhorn Oil Co.'s Severs 1, s½ se se 26-2s-3e, abnd 3061 ft. H. H. Blair et al's Smith 1, ne se nw 11-3s-1e, abnd 2439 ft.
LaSalle County—O. L. Greer's Davis 1, sw sw sw 23-35n-2e, abnd 1045 ft.
Lawrence County—Stacker & Kieffer's Rogers 1, nw se sw 17-2n-12w, abnd 2361 ft.
Marion County—Roy Dodd's Stater 1, se sw nw 9-1n-1e, abnd 2064 ft.
Perry County—Byers' McIntyre 1, ne se sw 36-6s-3w, abnd 1792 ft.
Randolph County—Gen. Oil & Synd.'s Scknoell 1, se se ne sw 27-4s-7w, abnd 105 ft.
Wabash County—W. O. Allen's Baird 1, sw sw se 30-1n-13w, abnd 2939 ft.
Washington County—A. J. Colgan's Meyers 1, ne ne se 26-2s-5w, abnd 1230 ft.
Wayne County—T. Blake Dirickson et al's Greer 1, c n½ nw se 24-1s-5e, abnd 3240 ft.
White County—Imperial O&G's Hubele 1, c s½ nw nw 15-5s-9e, abnd 3460 ft.

INDIANA
COMPLETIONS
Knox County—Naomi Oil & Gas' Walden 2, 261-5n-10w, otd 150 ft, td 790 ft, abnd.
Sullivan County—O. A. Thayer's Wilkie 1, c ne nw 7-7n-9w, abnd 1194 ft.

IOWA
COMPLETION
Montgomery County—Ohio Oil, Peterson 1, c se se 5-72n-38w, Lansing 70 ft, Base K. C. 305 ft, Mississippi 1152 ft, Hunton 1706 ft, St. Peter 2655 ft, Arbuckle 2676-2759 ft, abnd.

KANSAS
FIRST REPORTS
Barton County—Central Pet. et al's Unruh 1, c e½ se se 9-20s-15w, mim.
Ellis County—Central Pet. & Derby Oil et al's Lang 1, c n½ ne nw 20-13s-16w, surface hole.
Graham County—Cities Service Oil's Barber 1, ne ne ne 27-9s-22w, mim.
Greenwood County—George Henderson's Lewis 1, nw nw ne 36-27s-8e, dr.
Norton County—H & P & Phillips' Central Trust 1, c s½ se ne 25-2s-23w, pits.
Osborne County—Hoover & Adams et al's Koelling 1, c s½ se se 31-9s-15w, lcn.
Pratt County—Pryor & Lockhart et al's Massey 1, c e½ ne nw 35-30s-15w, brr.
Reno County—Rocket Drlg.'s Super 1, c n½ ne nw 30-25s-4w, surface hole.
Rice County—Hartman & Mitchell's Walstein 1, nw nw se 8-21s-6w, rur.
COMPLETIONS
Barton County—Wakefield et al's McGill 1, c s½ ne ne 18-20s-14w, Anhy. 845 ft, Ft. Riley 1920 ft, Florence 2020 ft, Lansing 3287 ft, Cong. 3541 ft, Arbuckle 3628 ft, abnd 3718 ft.
Butler County—Busher & Cling's Asmussen 1, sw nw nw 15-29s-4e, abnd.
Cowley County—Scott & Dickinson's Ramey 1, c w½ nw se 20-33s-8e, abnd.
Elk County—Frank Oyster's Steward 1, ne nw se 24-28s-11e, Lansing 710 ft, K. C. 1010 ft, abnd 1350 ft.
Graham County—Harbar Drlg.'s Wells 1, c e½ ne sw 18-7s-24w, Ft. Hays 675 ft, Cordell 705 ft, Breenhorn 975 ft, Dakota 1110 ft, Anhy. 2220 ft, Neva 3110 ft, Topeka 3538 ft, Lansing 3765 ft, Sooy 4169 ft, Viola 4275 ft, Simpson 4367 ft, Arbuckle 4382 ft, abnd 4395 ft. Cities Service Oil's Teall 1, nw nw se 27-9s-21w, Base Ft. Hays 380 ft, Greenhorn 580 ft, Dakota 820 ft, Cimmaron 1550 ft, Anhy. 1790 ft, Topeka 3307 ft, Lansing 3546 ft, Congl. 3857 ft, Arbuckle 3921-55 ft, trace black oil 3760-61 ft, abnd 3955 ft.
Greenwood County—LeBlanc et al's Mitchell 1, sw nw ne 29-27s-12e, Lansing 1008 ft, HFW 1170 ft, Oswego 1425 ft, Miss. 1804 ft, water 1875-77 ft, abnd 1877 ft.
McPherson County—Westgate-Greenland et al's Robertson 1, ne ne se 22-20s-3w, Lansing 2385 ft, Miss. 3054 ft, Base Miss. 3232 ft, Viola 3514 ft, Sylvan 3465 ft, cored 3542-54 ft, no show, Simpson shale 3552 ft, Simpson sd 3565 ft, Arbuckle 3626-36 ft, no show, abnd.

KENTUCKY
FIRST REPORTS
Muhlenberg County—E. E. Evans' Hunt 1, 20-H-31, completed.
Ohio County—West et al's Ashley 1, 1-L-31, lcn. Anderson et al's Kindall 1, 8-Q-30, lcn.

NORTH LOUISIANA
FIRST REPORT
Richland Parish—Bobby Manziel et al, Wooten 1, ne ne 28-15n-5e, lcn.
COMPLETIONS
Grant Parish—H. L. Hunt, Goodpine F-4, se nw 16-8n-1e, top Wilcox 1816 ft, abnd 4643 ft.
LaSalle Parish—Delta Drlg. Co., Hughes 1, sw ne sw 22-8n-1e, top Wilcox 2017 ft, perf csg 1462-65 ft, completed making 10 mil ft gas daily, otd 4092 ft, pb td 1509 ft.
Red River Parish—Republic Prod. Co., Timon 1, irreg sec 39-11n-9w, Saratoga chalk 1445-1500 ft. Annona chalk 1680-1790 ft; top Blossom (Ozan) 2122 ft, Austin chalk 2830 ft, lower Cretaceous 3160 ft, massive anhydrite 5163-5495 ft, Petter (Glen Rose) 6208 ft, abnd 6383 ft.

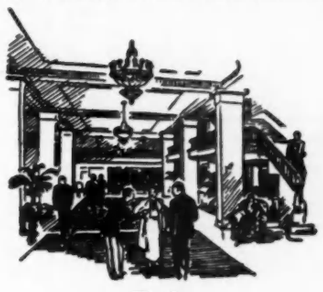
SOUTH LOUISIANA
FIRST REPORTS
Allen Parish—J. A. Hafner, Jr., Nevils 1, 1½ mi ne Indian Village, Stanolind farmout, 330 ft from e & 330 ft from s/1 of 40-ac tr in ne se 10-7s-8w, lcn 8000 ft test.
COMPLETIONS
Assumption Parish—George H. Echols & J. Ray McDermott, Armleise Planting Co. 1, e flank Napoleonville dome, 14-12s-13e, top salt 8874 ft, sand showing oil 8344-69, 8385-8413, 8734-38, 8800-12, csg set 8823, tests 8801-11, 8735-39, 8400-11, 8345-55 ft, showing salt water, abnd 8897 ft.

MISSOURI
FIRST REPORT
Buchanan County—Ohio Oil, Meek 1, center of sec 29-55n-35w, lcn.
COMPLETION
Shelby County—McAlpine et al's McKillip 1, se se se 35-59n-11w, Base Mississippi 300 ft, Kinderhook 300 ft, Hunton 433 ft, Viola 598 ft, Decorah 650 ft, St. Peter 700 ft, Arbuckle 793-800 ft, abnd.

MICHIGAN
COMPLETIONS
Lake County—Ohio Oil Co.'s Peiser 1, c s½ se se 6-18n-11w, Dundee 3493 ft, so 3635 ft, abnd 3666 ft.
Oceana County—C. W. Teater's Skidmore 1, se nw se 11-16n-16w, abnd 2021 ft.
OLD WELL DEEPENED
Allegan County—Regal Dutch Pet. Co.'s Heasley 2, se nw ne 21-4n-13w, old depth 1700 ft, deepend to 3702 ft, pb to 2892 ft, cmpd 450,000 ft gas in Salina, new lime discovery for Salem field.

MISSISSIPPI
FIRST REPORT
Union County—P. J. McAlpine & John E. Dickson (Oklahoma City), Nabors 1, sw ne 36-7s-3e, rig.
COMPLETION
Lauderdale County—Pierce Watters, Meeds

In LOS ANGELES



It's
HOTEL
CLARK

Nearest downtown hotel to HOLLYWOOD

WITH the movie capital of the world and western America's radio city within the borders of Los Angeles, entertainment reaches its zenith. Gay nights, laughter and life; sunny days filled with thrills and excitement. In the center of everything is situated the HOTEL CLARK at Fifth and Hill Streets. A hotel where you will enjoy hospitality to its fullest extent; where you will find your every wish anticipated. Whether you stay in Los Angeles for a few days or a month, choose Hotel Clark, downtown in the heart of things.

555 Rooms with Baths from $2.50

"Famous for Good Food from Coast-to-Coast"

ATTENTION . . .

SOUTH LOUISIANA OPERATORS!

We specialize in motor repair work for the oil fields.

OPEN 24 HOURS A DAY

INDUSTRIAL ELECTRIC, INC.
3227 Magazine St. New Orleans, La.
Phone CHestnut 6311

William M. Barret, Inc.

Consulting Geophysicists

Specializing in Magnetic Surveys

Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.

GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

OIL LEASE

618 acres 2 miles west of Bastrop. Rent free for a test well. Box 462, Bastrop, Texas.

FOR SALE: Used drill pipe due to discontinuing use of own drilling tools. Have two strings A-1 in 4" x 30' A.P.I. full-hole drill pipe, and two strings 3" drill pipe. Box 2018, Phone 4548, Tyler, Texas.

HOUSTON LABORATORIES

Analytical and Consulting Chemist

Podbielniak Gas Analysis
Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils
Long Distance 267, Box 132, Houston, Tex.

THE FORT WORTH LABORATORIES

Analysis of oil field brines, cores, gas, oil, and minerals. Field gas testing. R. H. Fash, Vice President; Long Distance 138. 823½ Monroe Street, Fort Worth, Texas.

OIL BOOKS

The knowledge gained through years of work and study by some of the most capable men in the oil industry is set down in the various oil books published and sold by the Gulf Publishing Company. Catalog upon request.

THE GULF PUBLISHING COMPANY
P. O. Box 2608 Houston, Texas

1, c w½ sw 26-5n-15e, top Midway 1500 ft, Selma chalk 1968 ft, Eutaw (Blossom) 2905 ft, Tuscaloosa (Woodbine) 3381 ft, Paluxy 4520 ft, abnd 4526 ft.

MONTANA

FIRST REPORT

Toole County—A. A. Oil Co.'s John Fey 1, sw se se 32-37n-2e, Sweet Grass Hills, dr 300 ft.

COMPLETION

Teton County—R. C. Tarrant's Kellogg 1, sw nw ne 33-27n-5w, North Pendroy Dome, abnd td 2912 ft, hole full of sulfur water in Madison 2894-2912 ft, top of Colorado 407. Cut Bank sand so & water 2698-2726, top of Ellis shale 2726, top of Madison 2890, elev 4120 ft.

OKLAHOMA

FIRST REPORTS

Carter County—Lloyd Sanders' Harmon 1, ne se sw 21-1s-2w, rt.

Stephens County—Winkler & Carter's Peck 2, se ne ne 1-3s-6w, ru.

Wagoner County—Ruso Drlg. Co.'s Cornelius 1, nw nw se 5-16n-17e, spud.

COMPLETIONS

Hughes County—Cummings' Bruner 1 ne ne 29-9n-7e, Booch 3389 ft, Unconform. zone 3449 ft, Crom. 3459 ft, abnd 3510 ft.

Jackson County—T. I. Sanders' Gamble 1, se se se 12-3n-21w, granite wash 1393, wash 2776 ft, td 3002 ft, brn shale & granite wash, abnd.

Jefferson County—Seitz Comegys et al's Bound 1, se se nw 11-6s-6w, abnd 2000 ft.

Lincoln County — Mid-Continent's Evans Land Co. 1, sw se ne 31-14n-6e, Cleveland 2420-80 ft, Oswego 3279 ft, Prue 3292 ft, cored shaly sand, Verdigris 3363 ft, Skin. 3570 ft, dry, Bartlesville 3780-90 ft, dry. Mayes 4175 ft, Hunton 4543 ft, Syl. 4625 ft, Viola 4718 ft, 1st Wilcox 4722 ft, dry. 2nd Wilcox 4800 ft, td 4844 ft, 5000 gals acid, 114 bbls oil & 216 bbls water. New pool.

Okfuskee County—Beal & LeVieux' Allen 1-A, nw sw nw 14-13n-9e, Bartlesville 2555 ft, show, abnd.

Pottawatomie County—Roodhouse et al's Blackburn 1, sw sw nw 3-10n-4e, Bell City 2460 ft, Hog. 2889 ft, abnd 4480 ft.

Wagoner County—Dr. V. V. Grant's Carter 1, nw nw nw 31-16n-19e, Pitkin 295 ft, so 382-90 ft, Mississippi 545 ft, Arbuckle 1035 ft, abnd 1060 ft.

TEXAS GULF COAST

COMPLETIONS

Fort Bend County—Providence Oil & Federal Royalty's Anton Hruzek 1, 1 mi w Orchard, Gail Borden sur, no show, abnd 8615 ft.

Fort Bend County—W. L. Goldston's E. J. Coyle 1, sec 39, H. T. C. sur, sand 5165-80 ft, perf 5176-80 ft, completed 1,500,000 cf day, tp 1950, cp 2150, td 6463 ft.

Harris County—Ralph A. Johnston's H. C. Cockburn 1, 2½ mi nw of Almeda, James Jefferies sur, ab 492, abnd 7520 ft.

Matagorda County—Barnsdall's Doman 1, 1 mi w Wilson Creek production, P. Burnett & G. J. Williams sur, abnd 10,110 ft.

Montgomery County—J. H. Blaffer's Bailey 1, Conroe outpost, R. Kuykendall sur, top pay 5072 ft, td 5096, flowed 421 bpd ¼-in ch, tp 1050, cp 1350, 39-gr. gor 2235/1; extension.

NORTH TEXAS

FIRST REPORTS

Clay County—N. H. Martin & Sons' McClellan 1, 1783 ft from sw and 150 ft se lines blk 22, J. English sur A-71, lcn. Superior Oil of Cal.'s Scaling 1, sec se nw HT&B sec 2, lcn deep test.

Cooke County—W. F. Russell et al's Bundy 1, nwc P. P. Cady sur, sp.

Jack County—Parker & Farris' Lewis 1, swc of east 80-ac blk 2, Navarro CSL sur, lcn.

COMPLETIONS

Archer County—H. Farmer et al's Elmore 1, sw¼ sec 29, blk 5, Clark-Plumb sur, abnd 1304 ft. Chas. Pechacek et al's fee 1, M. Fanning sur A-128, abnd 1180 ft.

Knox County—Seitz-Comegys & Seitz, Inc.'s Haskins 1, nwc e½ BBB&C sec 216, blk A, top Canyon 3266 ft, abnd 5012 ft.

Wichita County—Paul H. Sisk et al's Sisk 1, nwc lot 15, Denton CSL, League 2, abnd 110 ft.

Young County—Marie Eckert et al's Gadberry 1, swc ne ne TE&L sec 227, abnd 970 ft.

EAST TEXAS

FIRST REPORTS

Angelina County—K. L. McHenry et al's Southern Pine Lumber Co. 1, 11,220 ft from n and 1320 ft from e lines Jas. Clayton sur, mim for 5500-ft Wilcox test.

Hopkins County—W. B. Hinton and Talco Asphalt & Ref. Co.'s S. W. Long 1, sec of 225-ac tr, Ulysses Acquier sur, 3 mi w Birthright, Paluxy test, surface pipe 220 ft.

COMPLETIONS

Delta County—Talco Asphalt & Ref. Co.'s Peek-Gulf 1, nwc 100-ac lse, Wm. Ewing sur, elev 443 ft, top Woodbine 3221 ft, Paluxy series 4536 ft, abnd 4698 ft.

Gregg County—Roger Lacy et al's Horton-Dickson 1, 675 ft from e and 1200 ft from s lines J. L. T. Meredith sur, new shallow pay Willow Springs pool, elev 268 ft, top Georgetown 3336 ft, 1st Glen Rose 4860 ft, massive anhydrite 6200-6450 ft, Pettit 7126 ft, td 7327 ft, tested oil, gas and water in regular Pettit pay, pb perforated Rodessa 6490-6770 ft, initial 60,000,000 ft gas, 13 bbls distillate per million.

SOUTHWEST TEXAS

FIRST REPORTS

Aransas County—Continental's St. Charles 4, ACSL sur, 6000 ft se St. Charles fld, ru 10,000-ft test.

Cameron County—Pure's Gatewood-Newberry 7, R. Garcia Gr, 7½ mi nw Point Isabel, nlc 3500-ft test.

Duval County—Humble's Welder 2-E, Gray sur No. 224, 13½ mi nw San Diego, ru 4500-ft test.

Jim Hogg County—Corning & Auld's Draper 1, Noriacitas gr, 2½ mi sw Hebbronville, lcn 4300-ft test.

Karnes County—Phillips et al's Strunk 1, C. Martinez gr, 3½ mi se Kenedy, lcn 8000-ft test.

McMullen County—E. M. Jones' Ezzell 1-B, sec 33, 2 mi sw White Crk fld, sp 2000-ft test.

Nueces County—Guy I. Warren's Cooper 1, Sec 180, 4 mi nw Bishop, lcn 7500-ft test.

San Patricio County—H. A. Lindsay, Tr's Timon 1, blk 29, 5 mi se Mathis, lcn 6500-ft test.

Starr County—F. A. Gillespie & Quinto Oil Co.'s Guerra 2, H&GN Ry sur 23, 15 mi n Roma, mi 1800-ft test.

Victoria County—Rowan & Hope and Roy N. Ranger's Willett 1, A. Esparza gr, 8 mi se Placedo Junction, mi 6500-ft test.

Webb County—Transwestern Oil Co.'s Puig 1, Albercas gr, 7 mi se Mirando City, sp 2100-ft test.

Willacy County—Clark & Cowden's Corbett 1, Lot 2, blk 11, LaJara sub, 3 mi se LaJara, lcn 8500-ft test.

COMPLETIONS

Bexar County—G. C. Summar's Peterson 1, Viven sur No. 195, 1½ mi s LaCosta, abnd 1287 ft.

Duval County—Humble's Welder's 1-E, sur 222, 13½ mi nw San Diego, abnd 4513 ft.

Jackson County—H. M. Christie's Pickering 1, P. Scott sur, 9000 ft sw N. LaWard disc, perf 5210-18 ft, 118.91 bbls 25-gr, ¼ ch, 6000 lbs tp, 675 lbs cp, gor 306/1, extends fld. Mayo & Boyle's Bank of Georgetown 1, Musquiz gr, 3 mi nw Vanderbilt, abnd 6012 ft.

Jim Hogg County—Sun's Ramirez 1, Agua Nueveda Abajo gr, se por of county, abnd 4507 ft.

McMullen County—Mabel Rossi, Brown 1, Duncan sur 465, 9 mi w Whitsett, abnd 896 ft.

Starr County—Gillespie & Sons' Guerra 1, Sec 23, 40 mi nw Rio Grande City, abnd 2512 ft; Guerra 2, 100 ft nw Guerra 1, abnd 1325 ft.

WEST TEXAS

FIRST REPORTS

Crockett County—Jacobs & Gibson Oil Corp.'s University 1, nw se se sec 5, blk 29, dr 100 ft.

Mitchell County—Westex Oil Co.'s R. M. Jones 1, nwc w½ ne T&P sec 22, blk 29, T-1-N, lcn.

COMPLETIONS

Brewster County—Fred Turner Jr. et al's Turney-Humble 1, ne sw sw GH&H Sec 34, blk A-2, elev 3931 ft, abnd 2001 ft.

Crockett County—Moore Bros. et al's Childress-Halff 1, 1950 ft n and 2950 ft e of m/s/swc sec 71½ John Oney sur, elev 2338 ft, abnd 1502 ft.

Scurry County—Pearson-Sibert Oil Co.'s Addison 1, sec se H&TC sec 122, blk 25, elev 2279 ft, top lime 1705 ft, abnd 2620 ft.

WEST CENTRAL TEXAS

FIRST REPORT

Callahan County—Rhodes Drl. Co.'s Seale 1, 2310 ft out of swc Lewis Johnson sur 252, sp.

COMPLETIONS

Callahan County—F. E. McCreedy et al's George 2, sw nw nw B.O.A. sec 72, abnd 850 ft.

Comanche County—Rudy Grossenbacker et al's Polk 1, swc lot 10, Comanche CSL 42, abnd 810 ft.

Taylor County—Hedrick Oil Co.'s Arrant 1, nwc s½ T&P sec 53, blk 16, elev 1750 ft, abnd 2505 ft.

WYOMING

FIRST REPORT

Niobrara County—Cow Gulch Oil Co.'s Nelson 1, c se sw 19-35n-65w, woc 13-in csg 300 ft, South Lance Creek, Objective Leo series, 5600 ft.

MEN IN THE INDUSTRY'S NEWS

JOSEPH L. McHUGH of Jennings last week was named Louisiana Commissioner of Conservation by Governor Sam Jones. McHugh started his oil career in 1912 when he was employed by The Texas Company in Caddo and Oil City fields. Discharged from the Army in 1919, his first job was with a teaming and drilling company. Later he was employed by Coastal Oil & Fuel Corporation in Jennings field. Three months afterwards he was appointed general manager, and a year later he was made president of the company, a position he held until the firm was taken over by Yount-Lee Oil Company. The appointment marks the fifth office McHugh has held in the Jones administration. He served successively as secretary of the Civil Service Commission, director of Minerals Division of Department of Conservation, head of the Department of Reorganization, reappointed director of Minerals Division. He also represented the state as Coordinator of Mines, under Office of Production Management, Washington.

DR. ROBERT E. WILSON, president of Pan American Petroleum and Transport Company, New York, addressed the Houston chapter of the American Institute of Chemical Engineers, October 23, on "Refinery Gases as Chemical Raw Materials." Dr. Wilson, former petroleum adviser to the Office of Production Management, was accompanied on a tour of Pan American's properties in Texas by E. G. McKeever, first vice president, and J. A. Carroll, Jr., vice president and treasurer.

DR. RICHARD J. GONZALEZ, economist and chief statistician for Humble Oil & Refining Company, Houston, presented a paper before the Texas Statistical Council at Austin October 24 on "The Importance of the Petroleum Industry to the Economy of Texas." He pointed out that Texas had 55.8 percent of the known reserves of crude oil in the United States as of January 1, 1941, while producing 36.5 percent of the country's current output and refining 30.9 percent of the total processed in the nation. Out of a total of $2,615,000,000 of income for the state in 1939, he said, the indicated contribution of the petroleum industry was about $840,000,000, which was more than twice the farm cash income.

ROBERT F. DAVISSON of Grafton and Charleston, West Virginia, has been appointed instructor of oil and gas engineering at the School of Mines of West Virginia University. Since Davisson graduated from the school in 1939 he

Thomas R. Weymouth Receives Charles A. Munroe Award at Gas Meeting

Thomas R. Weymouth was awarded the Charles A. Munroe Award at the American Gas Association's annual meeting in Atlantic City, October 21, for having made the most outstanding recent contribution toward the advancement of the gas industry.

Consisting of a substantial financial acknowledgement and engrossed certificate, the award was made to Weymouth for his leadership of organized research activities and for his individual accomplishments of a fundamental and permanent nature. Among achievements over a period of years which led to his selection for this honor are:

He experimented extensively in the operation of gas compressors and engines and developed formulas for computing the gas delivery capacity and power requirements of compressors. He invented a special type of gas cooler for increased efficiency and collection of condensates.

He collaborated in the first practical determination of the deviation of natural gas from Boyle's law and conducted independent research on this subject, developing an approximate simplified method of securing the result. He also developed new instruments for determining the specific gravity of natural gas and collaborated with the National Bureau of Standards in a study of the efficiency and accuracy of the devices then available.

He conducted independent research on the extraction of gasoline from natural gas and collaborated in the development of the charcoal process. He collaborated in the development of the Oliphant pitot tube and developed the so-called Weymouth Formula for the flow of gas in pipe lines.

Weymouth invented one type of orifice meter and established the coefficients which formed the basis of measurement by the F[illegible]boro meter for gas and other flu[illegible]s [illegible]l the revision made by Gas Measu[illegible]ent Committee of the American Gas Association in 1935. He was chairman of the latter committee from its origin to date. He also has done research work on the underground storage of natural gas; in fact worked on some of the earliest experiments.

Born on March 16, 1876, at Lock Haven, Pa., Weymouth was graduated from Massachusetts Institute of Technology in 1897. In 1903 he became assistant engineer for National Transit Company, Oil City, Pennsylvania. His duties involved engineering work with various gas companies and in 1911 he joined United Natural Gas Company, Oil City, as assistant engineer, was soon made chief engineer and later was also chief engineer for Pennsylvania Gas Company, Warren, Pennsylvania.

THOMAS R. WEYMOUTH

In 1923 he became president of the Iroquois Gas Corporation, Iroquois Building Corporation, and Snyder Natural Gas Company, Buffalo, New York. Five years later, in 1928, he went to Tulsa, as president of Oklahoma Natural Gas Corporation and American Natural Gas Company, where he remained until 1930 when he joined Columbia Gas & Electric Corporation as vice president in charge of operations, from which position he retired on April 1, 1941.

Weymouth was a member of the Natural Gas Association of America since 1911, and, since its merger, has been a member of the American Gas Association, serving as chairman of the Natural Gas Section in 1938-1939. As a member of the main technical and research committee and chairman of the gas measurement group, he has provided leadership in the association's research program.

In 1920, Weymouth was consulting engineer for Public Utilities Commission of Alberta, Canada, in one of its cases and was a member of the arbitration commission for the adjustment of the rates of Canadian Western Natural Gas Light, Heat & Power Company.

The Charles A. Munroe Award Committee consisted of C. L. Campbell, chairman, F. H. Lerch, Jr., and D. A. Hulcy.

A BRIGHT FLOOD
A PIERCING SPOT

It's a 2 Light Lantern Safe to Use—Easy to Carry — Low in Cost

This is Ecolite Lantern No. 72—a double purpose, low priced electric lantern that gives a broad, brilliant floodlight or a 1500 foot focusing spotlight. These two features, plus the Ecolite pivot feature, make No. 72 the most useful portable lantern in the industry.

No. 72 carries the Underwriters' Laboratories recommendation for use in Class 1 Group D hazards and gives a safe, dependable light under all conditions.

Available Now at Supply Stores

Economy Electric Lantern Co.
3100 W. Cherry St. Milwaukee, Wis.

Clarence L. Boyd Co., Inc.

International Tractors
International Power Units
Bucyrus-Erie Equipment
J. D. Adams Road Machinery

Koehring
Hauling Equipment Cement Mixers
Shovels

Pipe Line Equipment
Trackson Pipe Layers
Pipe Line Supplies

Equipment for lease or rent

Clarence L. Boyd Co., Inc.
Tulsa, 3rd & Frankfort. Ph. 8191. L.D. 745
Oklahoma City, 17-19 West Pott
Guthrie, 501 W. Oklahoma

BRONZOID *Scores! Because it will not*
SCORE YOUR SHAFTS

High compressive strength — low Brinell hardness — outstanding performance record.

Only genuine BRONZOID contains pre-treated lead —which arrests crystalline growth.

BRONZOID

***Ask for it by name* — BRONZOID**

OIL CITY BRASS WORKS
FOUNDERS MANUFACTURERS MACHINISTS
Beaumont, Texas, U.S.A.

has been employed by Pittsburgh Equitable Meter Company and the West Virginia Public Service Commission.

WILLIAM G. HAMILTON, JR., has been promoted to assistant manager of Philadelphia factory and sales territory by American Meter Company. He joined the organization December 1, 1927, with the Helme & McIlhenny factory, which some years ago was consolidated with the John J. Griffin & Company factory into American Meter Company.

J. HARVEY HERD, West Texas geologist for Standard Oil Company of Texas, was elected president of the Midland Geological Society. B. G. Martin, Gulf Oil Corporation, and Eugene Vanderpool, Stanolind Oil & Gas Company, were chosen vice president and secretary-treasurer, respectively. Langdon Tennis, Midland consultant geologist, is chairman of the speakers committee.

LIEUT. JOHN D. TODD of Roper & Todd, Houston geologists, has been named public relations officer at Ellington Field, Texas.

JAMES A. LEWIS, vice president of Core Laboratories, Inc., Dallas, spoke before the Fort Worth Geological Society on "Interpretation of Core Analysis."

MAJOR L. A. BEECHERL of McDaniel & Beecherl, drilling contractors, has returned to Dallas headquarters after spending the past year on active Army duty at Fort Bliss and Fort Clark, Texas.

HALBERT M. McCLAIN, chemical engineer for Magnolia Petroleum Company, has been transferred from Oklahoma City to Dallas to assume charge of production engineering department, a new unit of the producing division. He is a graduate of Oklahoma A. & M., and has been with Magnolia since December 1, 1930, specializing in secondary recovery and conservation programs.

W. A. KIRKLAND, vice president of the First National Bank of Houston, will discuss "Oil Financing" at the first fall meeting of the Houston Chapter of American Petroleum Institute at 6:30 p. m. Thursday, October 30, at College Inn.

J. C. ASKAM and **J. D. WHEELER,** engineers for The Ohio Oil Company at Findlay, Ohio, are on an extensive tour. They were in Dallas for the A. I. M. E. meeting last week, and after inspection of company properties in various Mid-Continent and California fields will attend the A. P. I. meeting in San Francisco before returning home.

E. E. PYLES, L. L. Aubert and F. S. Bryant, members of the production committee for district 5, Pacific Coast, last week went to Washington to discuss details of the oil production program for the district with the Office of Petroleum Coordinator. The program was submitted to Coordinator Ickes early in the month.

SAM M. GREENIDGE, petroleum engineer and tax commissioner for Texas Pacific Coal & Oil Company, has been elected executive vice president of the Petroleum Engineers Club of Fort Worth, filling the unexpired term of John Wilmot, who has been transferred to The Texas Company's Wichita Falls office.

L. L. McCOLM, Hinderliter Tool Company, formerly located at Pampa, Texas, is now district manager for the company at Fort Worth. His territory includes East Texas, North Texas, West Texas, New Mexico and the Texas Panhandle.

DR. E. E. ROSAIRE, president of Subterrex, Houston, gave a paper on "Recent Prospecting Statistics" before the Houston Geological Society, October 23.

Association of Well Head Equipment Manufacturers group who met at Fort Worth recently at the regular monthly meeting. Standing, left to right, Charles Zartman and C. L. Cron, Rector Well Equipment Company, Houston; John H. Moran, Hinderliter Tool Company; J. J. Hastik, Brown Oil Tool Company; Frank Crow, Cameron Iron Works; L. L. McColum, Hinderliter Tool Company; C. J. Harris, Beaumont Iron Works; M. T. Works, Cameron Iron Works; Roy Hammond, Lone Star Tool Company; A. Henderson, McEvoy Company; R. V. Evridge, Rector Well Equipment Company. Seated, left to right, E. L. Barker, Atlas Engineering Company; L. D. Hilton, executive secretary of the Association, Houston; E. L. Lorehn, Cameron Iron Works; G. S. Watson, McEvoy Company; L. L. Rector, Rector Well Equipment Company; B. V. Fisher, Oil Center Tool Company.

Squeaks from the Bull Wheel

On Priority

I'se decided to leabe mah husband.

How come? Is yo' beginnin' ter 'conomize, too— or has som-body else done put him on deir priorities liss?

Tsk Tsk!

"Why are you rushing about like this on a hot day?"

"I'm trying to get something for my husband."

"Had any offers?"

Profitable Business

"He is one of the few men who have got rich from writing poetry. And he wrote for only six months."

"How the devil did he do that?"

"He wrote love sonnets to a rich and ancient widow."

Remember?

"Those roosters woke me up at dawn again this morning."

"Yes, but you can't blame the birds. Remember that the only morning you ever got up early you crowed about it for a week."

A Perennial

I wonder if I'll ever live to be a hundred.

Not if you remain 40 much longer, dear.

Hi Ho —

"Have you put the little sailors on the table yet?"

"Little Sailors?"

"Yeah, the goblets."

Splitting Hairs

"You want your hair parted exactly in the middle, sir?"

"That's what I said, didn't I?"

"Then I'll have to pull one out. You have five."

The Catch

"Yes, sir, I can marry any girl I please."

"Maybe you could marry any girl you please, but in this whole town I don't know of one that you please."

Strict Obedience

A new gob was sent aloft one night with strict orders to report all lights—all lights, it was emphasized. As soon as he hit the crow's nest he sang out:

"Light ho, sir. Two points off the starboard bow."

The officer screwed the glass in his eye and scanned the horizon. Not being able to raise anything he asked:

"Can you make her out?"

"Yes, sir."

"Report her."

"She's the moon, sir."

Melting Pot

The admiral was talking at a banquet on one occasion about racial characteristics.

"Eight men," he said, "were once wrecked on a desert island. A year later a ship picked them up. The skipper of the ship noted in his log that:

"The two Irishmen had fought each other twice a day during the whole year.

"The two Scotchmen had founded a Caledonian society.

"The two Englishmen had not spoken because they had never been introduced.

"The two Americans had opened a real estate agency in a palm-leaf hut, with a Kiwanis Club and a boosters' league."

Plenty of Help

"Yes, sir, I'm a self-made man."

"Well, you're lucky. I'm the revised work of a wife and three daughters."

Just One

"You can ask a question, but make it short."

"Well, when a doctor gets sick and another doctor doctors him, does the doctor doing the doctoring have to doctor the doctor the way the doctor being doctored wants to be doctored, or does the doctor doing the doctoring of the doctor doctor as he wants to doctor?"

Started in Early

"Yes, much depends on the formation of early habits."

"That's true. When I was a baby my mother hired a woman to wheel me around, and here I have been pushed for money ever since."

PRIORITY FORM PD-1

(Original Application for Priority Rating)

IN STOCK AND AVAILABLE FOR IMMEDIATE SHIPMENT

This is a four-page form in quintuplicate and must be filed by the **user** of material, equipment or service (excluding labor) on each specific material which can be filled by a **single** supplier and which is for use in completing a specific contract.

Other Priority Forms Also Carried in Stock

GULF PUBLISHING CO.

STOCK FORM DEPT.

P. O. Box 2608 Houston, Texas

Phone Hadley 3141

Gotkool
WATER CANS & COOLERS
GOTT WATER COOLER
Made in 3, 5, 8, 10, and 20 gallon sizes.
GOTT Water Coolers are the convenient way to keep drinking water handy to the worker, protect it from impurities. Their exclusive construction keeps water cool for long periods. Snug fitting large removable top, handy non-leaking push button faucet. GOTT Water Cans for handy field use. Your Supply Store has them, get one today! . . . .
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
GOTT WATER CAN
Made in 1½, 3, 5, and 10 gallon sizes.
KEEP PURE DRINKING WATER ALWAYS HANDY

NOTES FOR THE Equipment Buyer and User

Control Levers

THE BUCKEYE TRACTION DITCHER COMPANY

The Buckeye Traction Ditcher Company, Findlay, Ohio, has announced an improvement in the design of the control levers and linkage on Buckeye Model HD (Heavy Duty) power control units for Allis-Chalmers, Cletrac, and Caterpillar tractors.

The change incorporates relocated horizontal control levers which are placed within easier reach of operator. Better leverage is now secured and operation is simplier and more positive. The fair lead swivel sheaves have been lowered, thus bringing the direct line pull closer to the tractor drawbar, resulting in better tractor balance.

Complete control lever and linkage assemblies are interchangeable with the older style mechanisms and are available for replacing them.

Lubricator

THE ROTO COMPANY

The Roto Company, 145 Sussex Avenue, Newark, New Jersey, has announced development of a new type sight-feed lubricator for air-driven equipment which is said to operate successfully regardless of its position in the line.

A feature of the positive-action Roto sight-feed lubricator is that it requires only a single regulating valve instead of the 3 separate valves used on previous types. Oil is added by removing a screw plug at the top of the lubricator.

Roto lubricators are installed in an ordinary tee in the air line. They are made in 4/5 pint and quart sizes, and can be regulated to drop as few as 5 drops of oil per minute.

Idler

LINK-BELT COMPANY

Link-Belt Company, Indianapolis, Indiana, has announced the new swiveling, self-aligning idler for automatically correcting misalignment of either carrying or return runs of non-reversing conveyor belts supported on flat-roll idlers.

Idler has a centrally pivoted cross member which, besides being equipped with a flat idler roll for supporting the belt, has a vertically-mounted actuating roll at each end for lightly contacting the edge of the belt when its lateral misalignment exceeds a predetermined amount. For flat-roll belt conveyors that must operate in either direction, self-aligning idlers of special design are available.

Mud

Bariod Sales Division, National Lead Company, Los Angeles, Houston and Tulsa, announces publication of Volume 8, No. 2 issue of its house organ "Drilling Mud." The issue features Aquagel-water mud as a drilling-in fluid for low pressure areas and contains many illustrations and charts.

Bulldozers

Baker Manufacturing Company, Springfield, Illinois, has issued bulletin 834 explaining the operations and benefits of Baker bulldozers and gradebuilders with their direct hydraulic lift and down pressure. Specifications are given and candid shots of Bakers at work on different projects are shown.

Hose Coupling

CONTINENTAL SUPPLY COMPANY

The Continental Supply Company, Dallas, has revealed construction details, heretofore held secret, of the latest type rotary hose coupling assembly.

Code letters show (a) steel coupling cap, (b) built-in nipple, (c) expansion ring protectors, (d) rubber end cap seal, (e) expansion ring, and (f) coupling cap seal.

The company claims this type of construction provides a leak-proof full-hole connection which actually seals tighter as the pressure increases, as evidenced by hundreds of successful field installations.

An added feature is the fact that there are no bolts, nuts, or flanges to be tightened during operation. This coupling is shown as applied to Continental's Super Rough Rider Rotary Hose. It is also standard on the regular Rough Rider brand.

WEIGHT INDICATOR POINTS
THERE'S A FINE DIVIDING LINE between accurate interpretations of weight, speed, pressure and torque, and inaccurate interpretations that can cause trouble.
The Martin-Decker Automatic Rate of Penetration Recorder is a valuable guide for translating and adjusting instrument readings to produce more feet per hour . . . more straight hole per bit . . . in ALL formations. It logs formation breaks as you drill 'em, makes time-drilling-logging accurate and scientific.
Write for details.
MARTIN-DECKER CORP. LONG BEACH, CALIF.

ENJOY LIFE AT ITS BEST - IN KANSAS CITY MISSOURI

PENGUIN ROOM

GAY RENDEZVOUS, ENTERTAINMENT AND FINE FOOD

COCKTAIL LOUNGE

COFFEE SHOP

350 BEAUTIFUL ROOMS WITH BATH

From $2.50 TO $6.

THE ALCOVE

R. E. McEachin, Mng. Dir. Direction SOUTHWEST HOTELS INC. Mrs. H. Grady Manning, Pres.

11th & BALTIMORE

HOTEL CONTINENTAL

You're sure with "VULCAN"

TONGS

VISES

J. H. WILLIAMS & CO., 225 Lafayette St., New York

A Source Book in Geology

By KIRTLEY F. MATHER, Professor of Geology, Harvard University, and SHIRLEY L. MASON, Geologist. 702 pages, illustrated $5.00

This new book gives a comprehensive view of the development of geological science during the last four centuries, by presenting the significant passages from writings of the great contributors to that science in the past.

The excerpts include portions of the work of 130 geologists, original statements of many important principles and theories thus being made available. Many of the excerpts are translated from Latin, French, German or Italian.

Send Orders to the

GULF PUBLISHING CO.

P. O. BOX 2608 HOUSTON, TEXAS

HOW TO MAKE A LITTLE STEEL GO A LONG WAY

A 2", 6000 lb. test, ring joint flanged union weighs 54 lbs. . . . enough steel to make nearly five 2", 6000 lbs. test, UNIBOLT Couplings! And UNIBOLT Couplings have a higher safety factor.

UNIBOLT
THE ONE BOLT COUPLING

THORNHILL-CRAVER COMPANY
HOUSTON

QUICK DELIVERIES ON
STEAM CONDENSERS
and
FEED WATER HEATERS

We deliver small condensers and feed water heaters built to your specifications in days instead of weeks or months.

Call us also for expert maintenance of your condensers and feed water heaters—QUICK SERVICE.

25 Years Successful Experience

GULF ENGINEERING CO., INC.
"Service, Not Promises"
7014 NAVIGATION BLVD. HOUSTON, TEXAS
916 S. PETERS STREET NEW ORLEANS, LA.

You're $'s Ahead!
YORK
RECONDITIONED
PIPE AND EQUIPMENT
has plenty of service

When you get pipe and equipment from us you can be sure it has been reconditioned. Pipe is thoroughly checked, scaled, threads reworked and new couplings applied if necessary.

Quality merchandise at lowest prices.
DAY AND NIGHT SERVICE

OILFIELD SUPPLY CO., INC.
YORK
Kilgore, Texas Phone 1033
Lake Charles, La. Phone 3664
You furnish the well - Let us do the rest.
Houston, Texas Wooderest 6-0301

Sperry-Sun Wins Well Survey Patent Suit

Sperry-Sun Well Surveying Company's claim that its Patents Nos. 2,012,138 and 2,120,670 (commonly known as the Palmer and Hyer patents respectively) were being infringed upon by Eastman Oil Well Survey Company has been upheld by the District Court of the United States for the Southern District of Texas. The findings of the court in this suit, known as Civil Action No. 376, were:

(1) That the applications for patents involved were duly filed in the patent office, that such patents cover mechanisms which were new, novel and useful inventions, and patentable, and that both patents were and now are valid under the law.

(2) That the mechanism heretofore and now being manufactured, used and rented by Eastman Oil Well Survey Company infringes certain plants of the Palmer and Hyer patents.

(3) That the plaintiff should have judgment against defendant, restraining defendant from further infringement, and for damages for infringement in the past.

Priorities Specialist Will Speak in San Francisco

James E. Hughes, priorities specialist of the Office of Production Management, Washington, will address a special meeting of the Petroleum Equipment Suppliers Association which will be held at 2:30 p.m. on Monday, November 3, in the Garden Room of the Fairmont Hotel in San Francisco. The American Petroleum Institute opens its annual meeting in San Francisco November 3.

Hughes will discuss priority questions which are of importance to the oil industry. The meeting will not be limited to association members.

Layne & Bowler Increased Plant Capacity at Memphis

Layne & Bowler, Inc. of Memphis, Tennessee, recently added 8800 feet of floor space for use in making water-well screens and welded pipe. Features include concrete floor, maximum amount of daylight, improved ventilation and controlled heating with gas fired unit heaters.

Straight line fabrication has been adopted, thus placing in one building all machinery required in the making of water-well screens and pipe. Production is said to have been increased over 25 percent.

REGISTERED PROFESSIONAL ENGINEERS
Air • Gas • Water
REPRESSURING
RECYCLING • PRESSURE MAINTENANCE
INSTALLATION • OPERATION
PETROLEUM ENGINEER
JO H CABLE
WICHITA FALLS, TEXAS
GAS MEASUREMENT • PERMEABILITY
COMPRESSOR PLANTS • POROSITY
BOTTOM HOLE PRESSURE • SATURATION
GAS OIL RATIOS • RECOVERABLE OIL
CONTROL OF FLOW THRU FORMATION
REGISTERED PROFESSIONAL ENGINEERS

Advertisers' Index

In the following index is shown only the advertisers having advertisements in this issue.

The Louis Allis Co.	31-33
*American Iron and Machine Works Co.	IV Cover
*American Steel and Wire Co.	59
*Baker Oil Tools, Inc.	1
*Baroid Sales Division National Lead Co.	35
Wm. M. Barret, Inc.	74
Clarence L. Boyd Co.	76
Jo H. Cable	80
*Cameron Iron Works, Inc.	3
*Cardwell Manufacturing Co.	19
Hotel Clark	73
Columbia Steel Co.	59
Hotel Continental	79
The Continental Supply Co.	24-25
*The Cooper-Bessemer Corp.	21
*Dowell Incorporated	4
Economy Electric Lantern Co.	76
Fort Worth Laboratories	74
General American Transportation Corp.	42
*H. P. Gott Manufacturing Co.	77
Gulf Engineering Co.	80
*Hazard Wire Rope Division American Chain & Cable Co.	III Cover
Houston Laboratories	74
*Hughes Tool Co.	I Cover
Industrial Electric, Inc.	74
*Jensen Brothers Manufacturing Co.	69
Jones & Laughlin Steel Corp.	II Cover
*Lane-Wells Company	29
*Martin-Decker Corp.	78
*Mission Manufacturing Co.	46-47
*Morse Chain Co.	65
*National Lead Co.	35
National Tube Co.	38-39
*Oil City Brass Works, Inc.	76
*Otis Pressure Control, Inc.	27
*Patterson-Ballagh Corp.	43
*Pelican Well Tool & Supply Co.	67
Petroleum Electric Power Association	50
Petroleum Rectifying Company of California	23
*Reed Roller Bit Co.	6
Republic National Bank	2
*Thornhill-Craver Co.	80
United States Steel Corp.	38-39 and 59
*J. H. Williams & Co.	79
York Oilfield Supply Co.	80
Youngstown Sheet & Tube Co.	17

* Indicates that detailed information on the manufacturer's products or services may be found in the 1941 edition of The Composite Catalog of Oil Field & Pipe Line Equipment.